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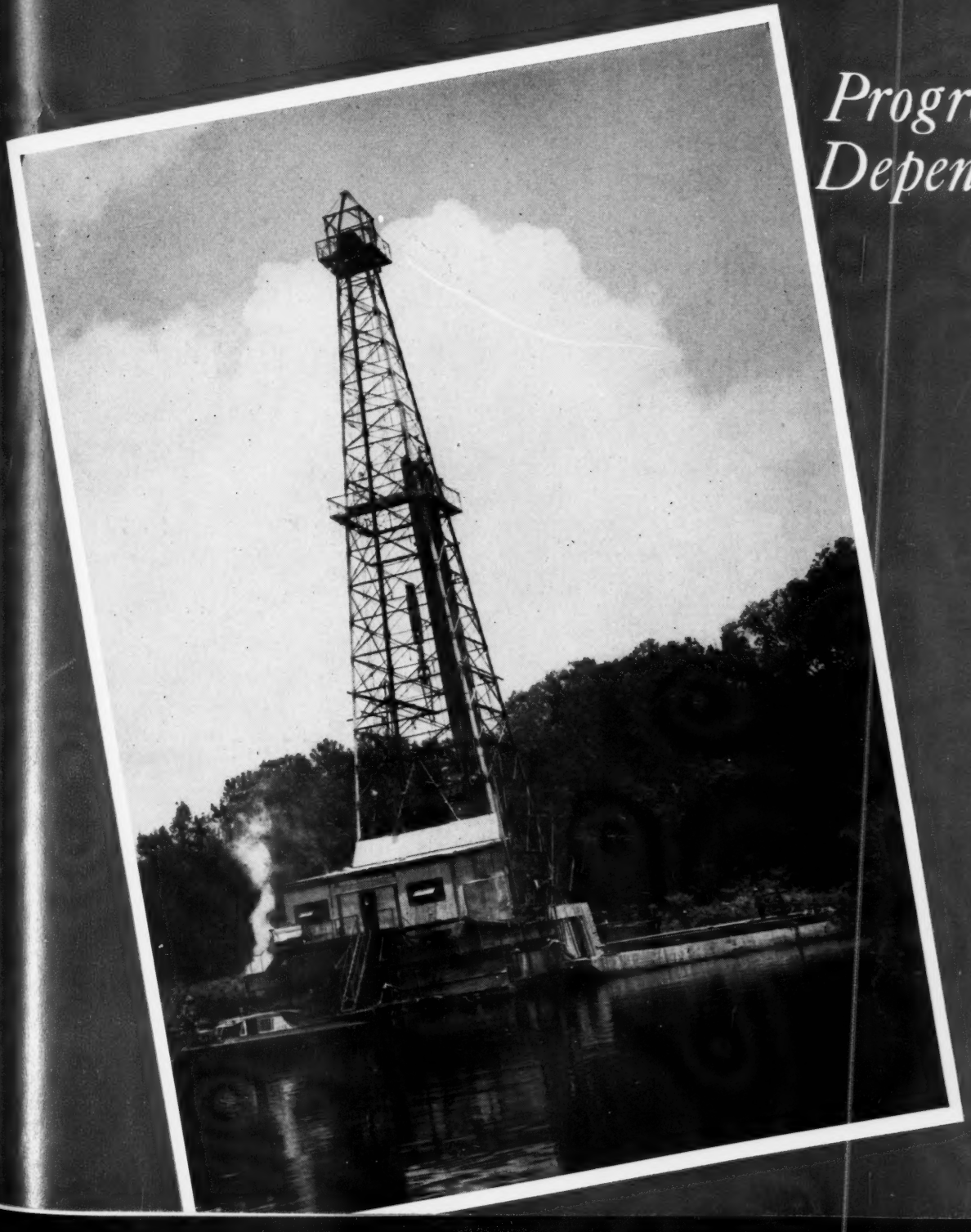

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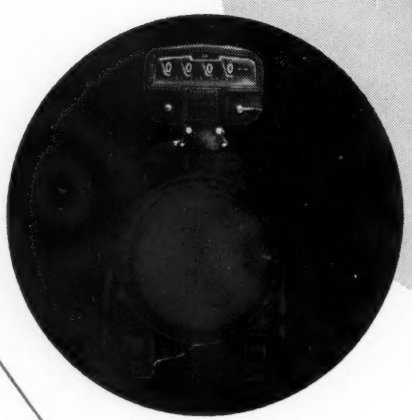
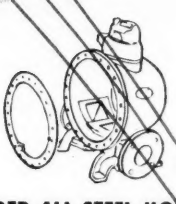
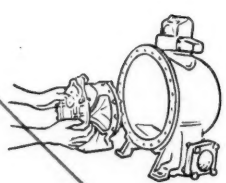


VIBRATIONLESS true rotary principle—smooth flow—complete static and dynamic balance.

JUST TWO MOVING PARTS in measuring element—no reciprocating parts.



WELDED ALL-STEEL HOUSING resists impacts, shocks, and surges.



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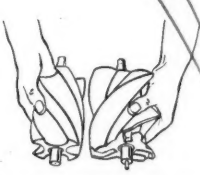

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APRIL fueloil & oilheat 1953

VOLUME 12 NUMBER 4

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YEARLY: $3.00

CANADIAN: $4.00

THIS ISSUE: $1.50

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PUBLISHED MONTHLY
BY HEATING PUBLISHERS, INC., PUBLICATION OFFICE: 109 MARKET PLACE, BALTIMORE 2, MD. EDITORIAL AND ADVERTISING OFFICES: 2 WEST 45TH ST., NEW YORK 36, N. Y. ESTABLISHED 1922.
NEW YORK TELEPHONE: MURRAY HILL 2-4786
ENTERED AS SECOND CLASS MATTER AT THE POST OFFICE AT BALTIMORE, MD.

ROBERT GRAY, *Editor* Bert Dunphy, *Managing Editor*
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Among other things . . .

The 31st Annual Convention of the Oil-Heat Institute takes place in Chicago on April 20 to 22, so the first feature gives details of the program as available at press time. It'll be worth your while to be there.

"More Profits from present Customers," which follows on page 76, presents the result of an analysis of the costs of delivering fueloil to large storage tanks and how price brackets can be used profitably on such deliveries.

Ventres and Heiple are back with more results of tests made at Shell's Laboratory. This time their article, page 84, discusses the advantages of long or short firing cycles.

More on wiring fundamentals is contained in Jack Schulz' article, this installment explaining voltage drops and wire sizes. This is Part II of a Series.

You'll be interested in the story on Underwriters' Laboratories, which includes a good deal of its history and its present functions. Begins on page 80.

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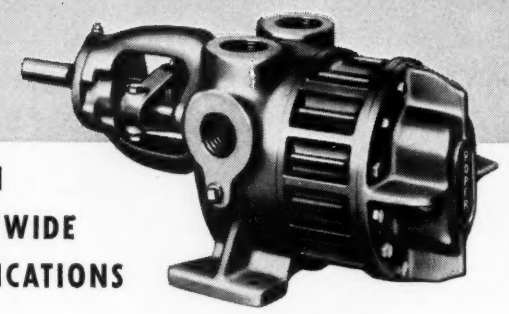
for Positive Results



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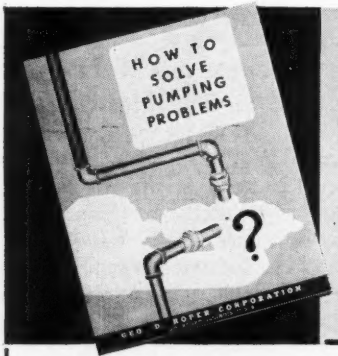
K	Pressure Lubrication Hydraulic Service Industrial Oil Burner Fuel Supply	to 150 P.S.I.	¾-50 G.P.M.
H	Hydraulic Power Test Equipment Pressure Lubrication High Pressure Coolant	to 1000 P.S.I.	5-75 G.P.M.



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Names in the News

Don Harway, Pacific Coast representative for FUELOIL & OIL HEAT, with offices at 1709 West 8th St., Los Angeles, Calif., in February celebrated his 25th year as a publishers' representative. He became representative for *Oil Heat* magazine in 1933 and remained with the organization when FUELOIL & OIL HEAT was formed in May, 1942. This, therefore, marks his 20th straight year of working with our organization and serving our advertisers on the West Coast.

H. P. Mueller, Jr. and *F. J. Nunlist, Jr.* have advanced to vice-presidencies of the L. J. Mueller Furnace Co., Milwaukee. Another appointment, announced following the company's annual meeting, was the naming of *H. D. Wirth,* former controller, as secretary and the addition of *William H. Brand,* president, Robert W. Baird & Co., Inc., Milwaukee, to the board of directors. Other directors were re-elected. Mueller, Jr. has had a diversified background with the company, starting in the engineering department and serving as a sales representative in the Milwaukee area. Most recently

Mueller

Nunlist

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NEW LOW-FRICTION POWER!

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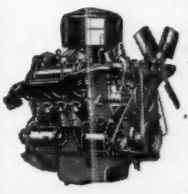

Overhead valve, 101-h.p. *Cost Clipper* Six, 145- and 155-h.p. *Cargo King* V-8's—cut down on friction *power waste*, save gasoline. Also, 106-h.p. Truck V-8 and 112-h.p. Big Six.

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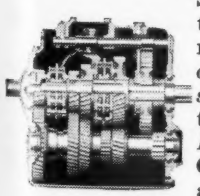

Synchro-Silent transmission on all models at *no extra cost*. *Steering post shift* on 3-speed transmissions. *New Fordomatic Drive* or Overdrive now available on all ½-tonners at extra cost.

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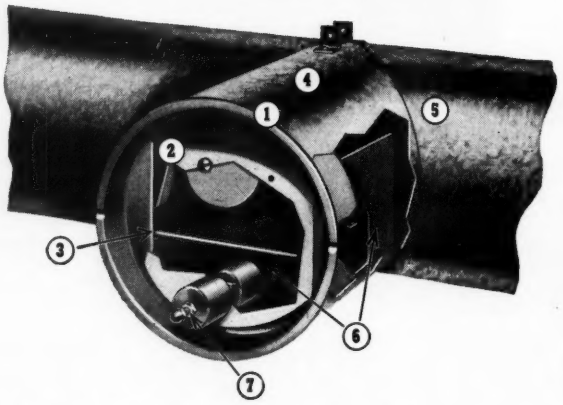

The Field Draft Control is quick, easy and simple to install. But far more important it keeps performing without requiring attention itself — no warping, sticking, clogging — and without causing extra service calls due to smoking or fuel waste. And for the customer a Field Control means maximum fuel economy. For every 1/100" of excess draft eliminated, due to Field's greater accuracy, there is up to a 1% fuel savings. Yes, you can depend on Field.

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Field Controls are factory set to maintain an .06" draft until a precise, hair-line setting — possible with a Field — can be conveniently made.

he had been assistant sales manager. Nunlist, formerly general sales manager, is well known in the heating industry and has been particularly active in association work.

Robert H. Chaffee has become sales manager for heating and cooling products, Taco Heaters, Inc., Providence 3, R. I. His experience in the heating industry dates back to 1929 and he has been with Taco since 1943 as New England sales manager. Chaffee will make his headquarters at Providence, operating under the direction of Joseph R. Murphy, vice-president in charge of sales.

Lyle L. Groff, formerly manager of service parts, has been named assistant sales manager, Norge Heat Div., Borg-Warner Corp., Kalamazoo, Mich. Groff has served the company for more than five years as sales engineer, assistant service manager and regional sales manager. *Charles Price*, formerly an assistant in the department, has been promoted to service parts supervisor.

Regis L. Plante has been appointed sales manager, Heating Equipment Div., Braun Bros. Oil Co., Winnetka, Ill., to coordinate the activities of the company's sales organization throughout the Chicago and North Shore territory. Plante has been associated with Commonwealth Edison Co., has conducted dealer sales training for Eureka Williams Corp. and most recently managed heating sales for C. E. Sund-

(*Please turn to page 30*)

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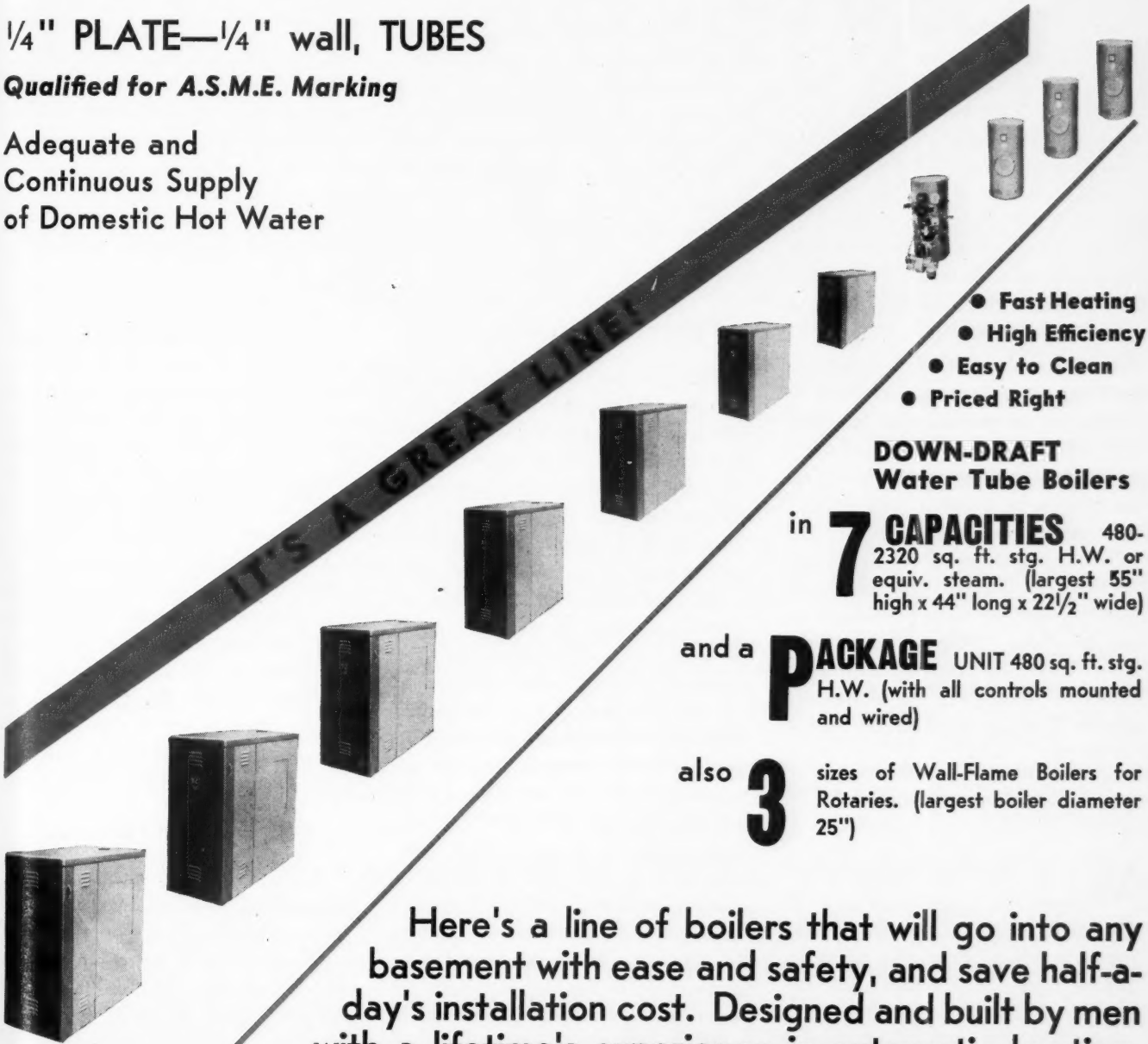

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Water Tube Boilers

in **7 CAPACITIES** 480-2320 sq. ft. stg. H.W. or equiv. steam. (largest 55" high x 44" long x 22½" wide)

and a **PACKAGE** UNIT 480 sq. ft. stg. H.W. (with all controls mounted and wired)

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Editorial Leaks

Upon the completion of his second term as president of the Oil-Heat Institute it is fitting that T. A. Crawford, vice-president and general manager, Timken Silent Automatic Div., The Timken-Detroit Axle Co., Jackson, Mich., be given the opportunity to speak through the Editorial Leaks' page to the oilheating industry. At the same time, the Editor was off on a six-weeks' trek to the West Coast and we had the space to fill.

In all seriousness, though, Al Crawford characteristically has declined to indulge in generalities and certainly sings no swan song as his term of office as Institute president ends. Instead, he has chosen to translate into writing some penetrating thoughts on how the oilheating industry can and should better the public acceptance it enjoys and then follows with typical comments on merchandising, a topic dear to Al's heart. Note, too, that the "alert merchandiser" is urged to attend the OHI Annual Convention in Chicago, April 20 to 22.

We are pleased to present Guest Editor Crawford.

WHEN THE EDITOR invited me to write this page for FUELOIL & OIL HEAT during his absence, he gave me the privilege of choosing my topic. Let me then chat with you about the general situation that affects future sales possibilities for oilheating equipment.

Whether your income is derived chiefly from the sale of fueloil or from the manufacture of accessories or from other related activity, your future sales volume in the oilheating field will be determined by the actual sales of oilheating installations and by their continued salability in your market. Said another way, the future of each of us engaged in the business depends to a great extent on our success in keeping our users satisfied, and in keeping our prospects convinced that oil heat is really a better buy.

Are we doing a good job of satisfying our users? How much "public acceptance" do we actually enjoy?

Use any yardstick you will, and acceptance of automatic oil heat measures up to a high mark. Nearly one out of every three homes in the country now enjoys automatic heat. Many of the others are in warm climates—or have no central heat—or are at such a low economic level that the present cost of automatic heat is beyond reach of their owners. In colder climates and more prosperous neighborhoods, many more than one out of three homes are automatically heated.

Higher Standards possible

This is a good record from many viewpoints, especially when you note that more than half of these automatic heating jobs are oilfired, with the balance divided among the several competitive fuels and methods. However, it's too bad so many of these users do not experience the best results we know how to give them. To the extent that these users are inconvenienced by service failures—to the extent that service costs are high—to the degree that heat is not distributed uniformly throughout the occupied space, or that temperatures are not maintained at a uniform level—in the amount that fuel bills are higher than they should be or higher than competitive fuels—yes, and to the extent that we or any of our employees fail in courtesy and interested attention to our customers' needs—we fail to measure up to the high standards we know are within our possibilities.

All of us will agree that every user expects to get gilt-edged performance in every respect. The fact that his is one of the million or so pre-war burners that are still running—or that his heating system is defective—or that his house is leaky—will not be taken into account when he compares his results with those of his neighbor who brags about the superior performance of a 1953 installation of an integrated unit burning gas in a well-insulated house.

T. A. Crawford

We can't afford to sit back complacently and say that it is too much bother to ferret out those sub-standard jobs and sell replacements, together with whatever heating plant improvements are needed. Do it we must—for it means much more to us than simply a replacement sale. It means we have an opportunity to make a vocally enthusiastic user out of a half-hearted user. It gives us a new chance to win his endorsement of oil heat to friends who are prospects for automatic heat, and who might not otherwise buy.

Another word about this idea of "public acceptance." Look back to World War I days. Then the coal industry monopolized the heating fuel market. Solid fuel lost out because fluid fuels were more convenient, cleaner and more economical. But, in addition, there was a difference in attitudes of the industries. The coal industry subjected its users to unnecessary shortages of supplies, price rises and inconsiderate service. Not until long after the market had been lost to oil did the coal man try very hard to improve either heating results or service. He had felt the business was his, and the customer wouldn't change fuels. History has proved him wrong.

Sell automatic Oilheating

Taking a lesson from his sad book, let's not feel too self-satisfied about our own accomplishments—or about the public preference we enjoy. To be sure, buyers who can afford it demand automatic heat. Almost all new homes in cool climates are equipped with automatic heat. Few speculative builders will even try to sell a house heated by an old-fashioned plant. And no doubt most occupants of homes which still have central heating plants fired by coal shovels are counting the days until they can have clean, work-free automatic heat.

However, buyers have proved over

What's the difference between these two oil heat salesmen?

There is only one difference — **VENTALARM® Signal.**

"But *what a difference*", say oil heat salesmen, "when it comes to getting an interview with a prospect in the face of competition . . . reviving the interest of an old prospect . . . or coming up with that 'special' needed to close the sale."

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Why these big differences? Because when you offer VENTALARM Whistling Tank Fill Signal service you can promise clean, convenient fuel oil delivery day or night — oil heat that is truly automatic. The oil man need never enter the home. HE JUST SAFELY FILLS 'TIL THE WHISTLE STOPS.

Model "LA" for new burner installations. Model "LC" for tanks already in use.

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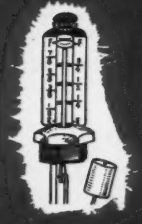

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Portable connection for gun and fill pipes of all sizes

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Revolutionary Simplified 1 Piece Combustion Head

12% CO_2 with #1 or zero smoke not unusual. Available in all sizes to be applied to all gun type burners. Simply remove present end-cone, replace with Mix-Mor . . . nothing else to do. It will amaze you.

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The Mix-Mor and the Heat-Lock are available to one dealer only in each trading area. If you are the only dealer who can provide the Heat-Lock with your new burners, you can take sales from all competitors.

The combination of Mix-Mor head, Heat-Lock and Thermoglo make a highly saleable modernization "package" to everyone whose efficiency is under 80% with smoke reading no higher than No. 1. Introductory offer: Kit of above 3 items $14.62. Order trial kit on money back guarantee. Get in on this whole new profitable field. Write today to

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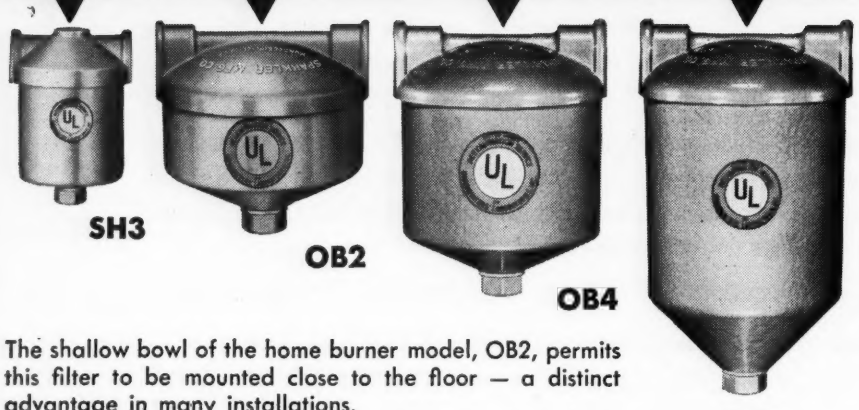
P. O. BOX 750, WHITE PLAINS, N. Y.

SPARKLER FUEL OIL FILTERS



The shallow bowl of the home burner model, OB2, permits this filter to be mounted close to the floor — a distinct advantage in many installations.

The rayon filter element in all Sparkler fuel oil filters removes all rust, moisture, and fine dirt– no by-passing.

MODEL	SERVICE RECOMMENDATIONS
SH-3	for space heaters and other small burners
OB-2	for average home burners
OB-4	for apartment buildings and small steam or hot water boilers
OB-8	for industrial burners

Available from all oil burner jobbers

SPARKLER MANUFACTURING COMPANY

Mundelein, Ill.

MAKERS OF FILTERS FOR INDUSTRIAL AND PETROLEUM PRODUCTS FOR OVER 25 YEARS.

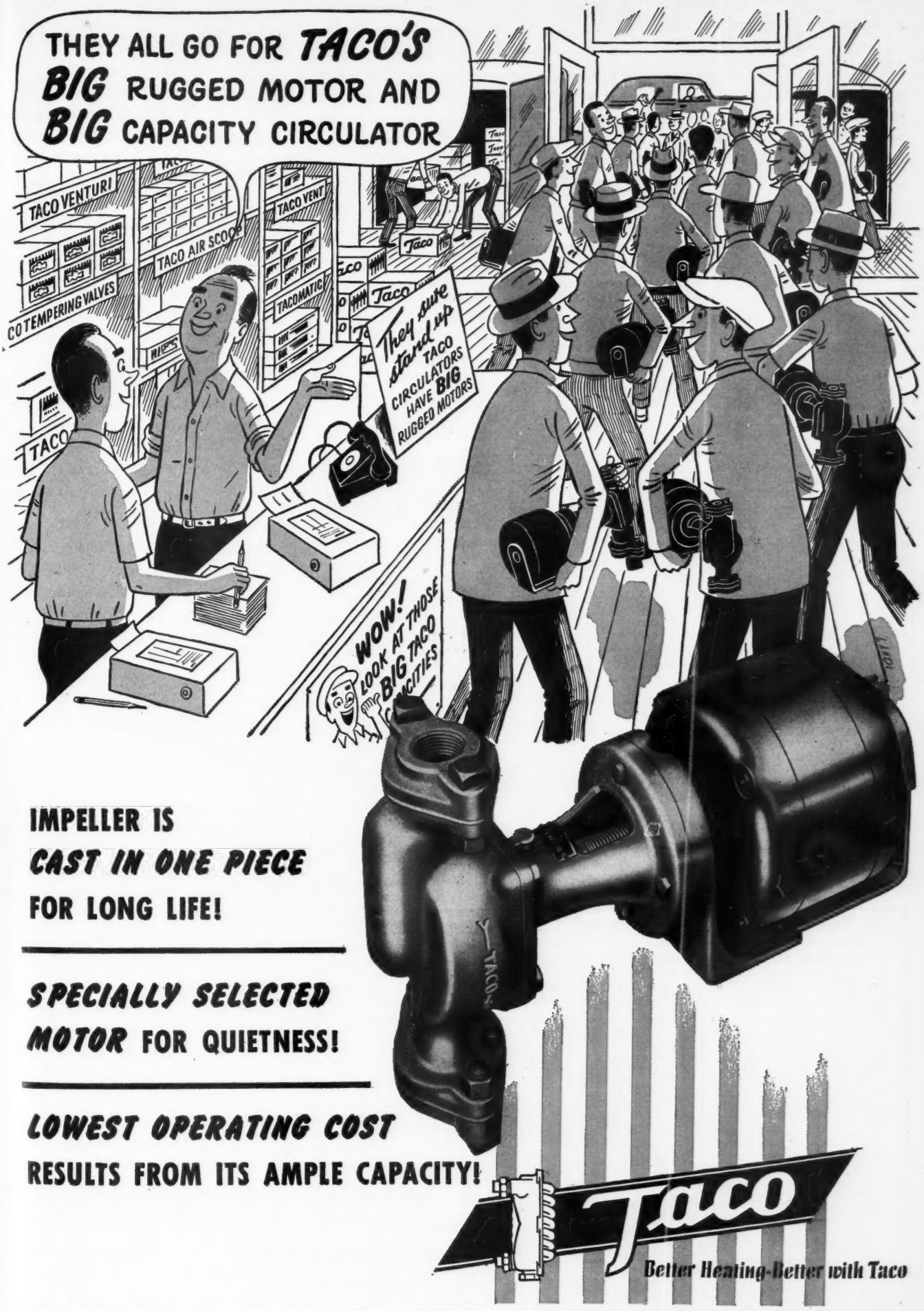
and over again that their demand is for automatic heat and not necessarily for oilfiring. The choice between fuels is based on economics — comparisons between total costs, including installation cost, and lifetime operating costs —and on the same considerations that ordinarily determine the choice between brands.

The Case for Merchandising

Now consider a few thoughts on merchandising. The oilheating business is not a commodity business, geared to satisfying an existing demand for fuel and equipment. Every dollar's worth of business throughout the industry originated from the creative salesmanship of aggressive retail salesmen and dealers. In the 20's, every single sale was made in a "show-me" discussion. During the depression 30's, sales of oilheating equipment increased by reason of this kind of aggressive selling, while general business slumped.

Since the war's end, sales of oilheating equipment have been relatively easy to make, limited chiefly by available supplies of equipment, fuel and manpower. However, that favorable sales climate is changing and no one can can continue to rely on getting a satisfactory sales volume in 1953 without adequate effort. To begin with, the 1953 merchandiser must adopt an aggressive sales attitude. He must determine that he will push for equipment sales—and even if he is not a retailer, he will do all he can to make oilheating attractive to buyers and users and easier for salesmen to get orders. He will build up his sales force, increase his advertising, and push for business. He will recognize that constructive merchandising activities right now and throughout 1953 can greatly increase his business.

And, finally, having acknowledged the need for an aggressive program of merchandising, and for improving his customer relations, the alert merchandiser of the 1953 pattern will be sure to attend the Annual Convention of Oil-Heat Institute of America (Chicago, April 21 and 22) to get a hatful of how-to-do-it ideas from the best-qualified persons in each branch of the industry.


THEY ALL GO FOR TACO'S BIG RUGGED MOTOR AND BIG CAPACITY CIRCULATOR
TACO VENTURI
TACO AIR SCOOP
TACO VENT
TACOMATIC
CO TEMPERING VALVES
TACO
They sure stand up TACO CIRCULATORS HAVE BIG RUGGED MOTORS
WOW! LOOK AT THOSE BIG TACO
TACO

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***SPECIALLY SELECTED MOTOR* FOR QUIETNESS!**

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Taco

Better Heating-Better with Taco

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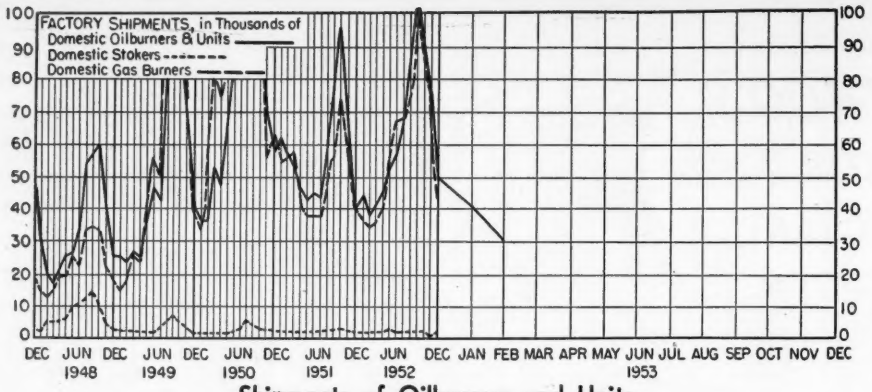
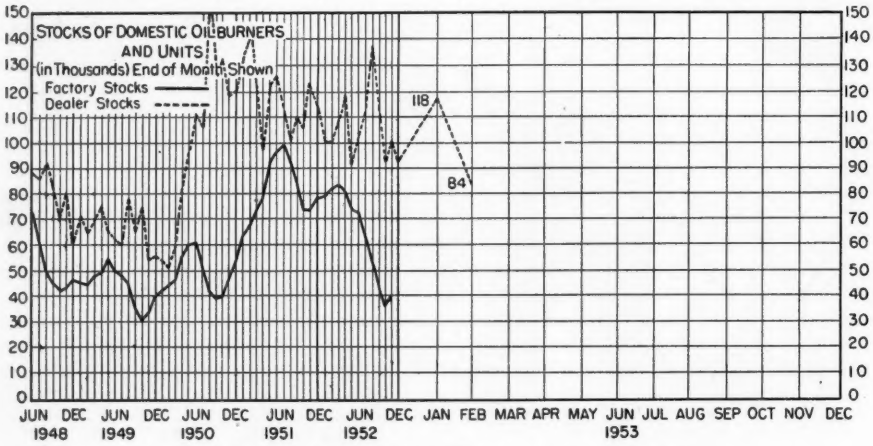

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
Domestic Gas Burners
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1948 1949 1950 1951 1952 1953

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 145 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	DECEMBER			TWELVE MONTHS		
	1952	*1951*	*Percent Change*	*1952*	*1951*	*Percent Change*
Conversion	36,148	26,396	+ 13.7	531,357	488,661	+ 10.9
Boiler Units	4,922	2,758	+ 17.8	67,208	58,052	+ 11.6
Furnace Units	11,214	10,369	+ 10.8	184,375	146,621	+ 12.6
All Domestic	52,284	39,523	+ 13.2	782,940	693,334	+ 11.3
Commercial	3,760	2,401	+ 15.7	37,470	39,540	— 5.2
Total	56,044	41,924	+ 13.4	820,410	732,874	+ 11.2


STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
118
84
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1948 1949 1950 1951 1952 1953

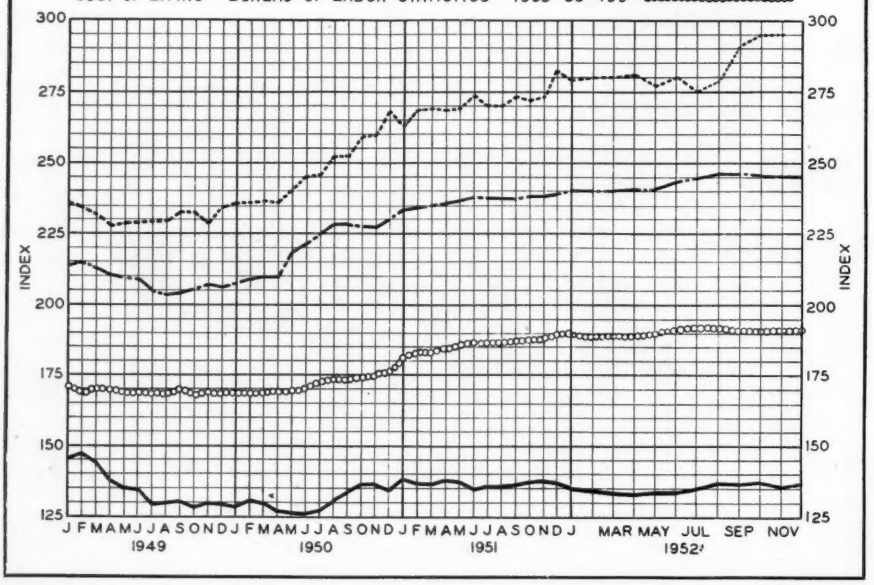
February Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
February Aver.	$322	$710	$643
January Aver	326	712	646

Price Index: Conversion Burners: January 1940 is 100%

	WHOLESALE				RETAIL			
February	144.3	Six months ago	144.7	February	135.6	Six months ago	137.5
January	150.6	Year ago	142.3	January	137.0	Year ago	132.9

OILBURNER PRICES COMPARED TO GENERAL INDEXES


OILBURNER PRICES – RETAIL CONVERSION BURNER – JAN. 1940 = 100
INDIVIDUAL INCOMES – BUREAU OF LABOR STATISTICS – 1939 = 100
CONSTRUCTION COSTS – RESIDENTIAL – DEPT. OF COMMERCE – 1939 = 100
COST OF LIVING – BUREAU OF LABOR STATISTICS – 1935-39 = 100
INDEX
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MAR MAY JUL SEP NOV
1949 1950 1951 1952

Oilheating Trends

ESTIMATED INSTALLATIONS of domestic oilburning units during the month of February totaled 30,364, a drop of about 1[illegible] from last year. Installations were divided: New Homes 10,627; replacements of old oilburners, 6,073 and conversions from other fuels, 13,664. For the two months' period 1953 installations were 71,799, down 16% from the total of 85,722 registered for January and February last year. Again, it is well to remember that the first quarter of 1952 showed greater gains from the previous year than were recorded during the later months. As a matter of fact the 1953 total installation figures for January and February were just about the same as the totals for the same two months in 1951.

BURNER STOCKS: Oilheating dealers had in stock on March 1 83,780 oilburners and units—48,498 conversion oilburners, 12,886 boiler-burner units and 22,396 furnace-burner units. These were down from the stocks recorded on March 1, 1951 when 100,350 were on hand. Factory stocks on December 31, the latest available data, were 47,827, compared with 78,937 on the same date the previous year.

TANK STOCKS: Stocks of consumer oil storage tanks held by dealers on March 1 totaled 83,081, changed very little from the previous month, but registering a rather significant drop from the 122,219 that dealers had in stock on February 1, 1952. There has been little difficulty reported securing fueloil storage tanks, so that the stock situation probably indicates that dealers still see no need for stocking up.

By sizes the tanks were divided: 220-275 gallon, 75,382; 550-675 sizes, 5,105 and 1000 gallons or larger, 2,594.

Average price for a 275 gallon tank during February was $35, exactly the same as that reported for January. By sections the average price in February was: New England, $31; Middle Atlantic, $35; Midwest, $33; Pacific Northwest, $42.

BOILER BUYING HABITS: The habits of oilheating dealers during 1952 in

MOR-SUN OFFERS MORE!

+ MORE QUALITY
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+ MORE INVENTORY CONTROL
+ MORE CAPACITIES
+ MORE MERCHANDISING
+ MORE ADVERTISING
+ MORE PROFIT OPPORTUNITY

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- JMT Series— 4 Models — BTU Output Range 84,000 to 152,000
- RF Series — 3 Models — BTU Output Range 52,000 to 95,200

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OIL
LPG

There are a lot of Plus Signs for Distributors, Dealers and Installers in the new MOR-SUN Furnace Line. Constant improvement in our products through better design and advanced engineering combined with precision mass production methods have resulted in MOR-SUN Furnaces delivering TOP DOLLAR VALUE.

The new, more efficient Heat Exchangers—*now guaranteed for 10 years*—used in all MOR-SUN models are outstanding examples of design and engineering improvements. Our manufacturing facilities have been expanded to enable us to deliver greater production by precision manufacturing methods. Add to this quality of product a forceful advertising and merchandising program and you have the principal reasons why so many alert furnace men are turning to MOR-SUN for more profit opportunity. If you are interested in quality merchandise to fit today's marketing conditions, *look to Morrison.*

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Address _____

City _____ Zone _____ State _____

☐ Distributor ☐ Dealer ☐ Installer
(please check)

MOR-SUN FURNACE DIVISION

MORRISON
STEEL PRODUCTS, INC.

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ALSO MANUFACTURERS OF ROLY-DOOR STEEL SECTIONAL GARAGE DOORS AND CARRY-ALL TRUCK BODIES

fueloil & oilheat

buying oilfired boilers and units and the channels through which they purchase them were explored this month. Of the reporting dealers 39% say they buy completely-assembled, packaged boiler-burner units, another 36.2% indicated they buy complete units, knocked down for the dealer to assemble and 24.8% prefer to purchase separate boilers designed for oilfiring. Of these separate boilers, 73.1% were installed by the dealers with their own conversion oilburners to make up complete heating uints. The balance of the separate boilers presumably went into stock or were used to replace an old boiler, using the conversion oilburner that had been installed in it.

Where dealers bought boiler-burner units, they were asked to tell us what per cent they purchased from typical oilburner manufacturers, where a manufacturer would purchase a boiler and equip it with a burner of his own make before shipment, and what portion were bought from old-line boiler manufacturers, where they used their own boilers with a burner purchased separately. The ratio was pretty even, 53.5% of the oilheating dealers reporting they placed their orders with oilburner manufacturers, the remaining 46.5% stating they buy from the boiler companies.

Then the dealers were asked to indicate whether they buy boilers and units direct from factories or from local jobbers. When purchasing complete boiler-burner units the dealers reported that 71.3% of these are bought direct from factories, 28.7% from jobbers. When buying separate oil boilers almost the reverse holds true, 16.1% dealing direct with factories and 83.9% preferring to buy from their local jobbers.

FUELOIL CREDITS: Fueloil dealers were asked about the status of their receivables from the standpoint of how long they were finding it necessary to wait for payment. By sections of the country the percentages showed a surprising uniformity and nationally the average showed: 62.3% of the total owed to fueloil dealers was 30 days old; 19.5% was 30 to 60 days old; 9.0% was 60 to 90 days in arrears; 6.3% of the accounts receivable were 90 to 120 days old and 2.9% were more than 120 days old.

Oilburner* and building Permits

OILBURNERS					DWELLINGS			
February		2 MONTHS			February		2 MONTHS	
1953	1952	1953	1952		1953	1952	1953	1952
20	15	38	37	Albany, N. Y.	..	..	..	..
99	163	251	319	Baltimore, Md.	559	486	928	735
..	..	..	..	Binghamton, N. Y.	6	4	8	6
..	..	..	..	Bloomfield, N. J.	7	2	9	8
..	..	..	..	Boston, Mass.	16	22	33	58
99	27	191	137	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	18	52	43	100
8	25	38	130	Columbus, O.	..	..	..	..
..	..	..	..	Des Moines, Ia.	174	45	497	66
194	636	..	1409	Detroit, Mich.	194	324	340	564
21	21	53	39	Elizabeth, N. J.	4	2	7	2
24	36	64	83	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	32	20	48	33
..	..	..	..	Hackensack, N. J.	7	5	13	12
..	80	..	206	Hartford, Conn.	..	..	..	..
..	..	..	..	Hudson County, N. J.	..	..	..	..
27	13	38	22	Irvington, N. J.	4	1	11	2
..	..	..	..	Lynn, Mass.	7	16	12	24
..	43	..	103	Meriden, Conn.	..	..	..	..
353	223	700	381	Milwaukee, Wisc.	117	143	236	220
42	115	87	282	Minneapolis, Minn.	43	71	67	95
13	13	19	35	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	2	7	4	10
23	19	43	38	Mt. Vernon, N. Y.	..	..	..	..
91	79	166	155	Newark, N. J.	..	..	..	..
63	122	149	243	New Bedford, Mass.	..	..	..	..
21	48	68	177	New Haven, Conn.	..	..	..	..
..	..	..	..	New Orleans, La.	..	..	..	..
12	20	25	44	New Rochelle, N. Y.	36	5	52	37
..	5133	..	13294	New York City (total)	..	..	..	..
..	4620	..	12125	Brooklyn-Queens	..	..	..	..
523	513	1075	1169	Manhattan, Bronx, Rchd	..	..	..	..
..	26	..	109	Norfolk, Va.	44	179	127	314
..	..	..	..	Oakland, Calif.	..	..	..	..
25	38	90	120	Omaha, Nebr.	52	55	75	96
8	9	16	18	Orange, N. J.	4	0	8	1
3	16	13	30	Passaic, N. J.	..	..	..	..
21	29	45	50	Paterson, N. J.	12	11	22	17
258	583	..	1172	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	11	12	17	28
27	16	83	65	Portland, Me.	3	2	7	5
..	257	..	642	Portland, Ore.	167	121	298	190
11	15	30	27	Poughkeepsie, N. Y.	..	..	..	..
99	113	177	229	Providence, R. I.	10	8	24	17
..	..	..	..	Reading, Pa.	5	3	11	11
17	48	73	112	Richmond, Va.	60	37	127	79
13	23	64	81	Roanoke, Va.	..	..	..	..
97	110	240	330	Rochester, N. Y.	..	..	..	..
22	15	32	32	Rockville Center, N. Y.	4	12	11	17
11	31	47	66	Salem, Mass.	9	1	14	5
..	137	..	268	St. Louis, Mo.	31	31	38	52
20	30	66	86	St. Paul, Minn.	36	139	68	177
9	31	29	75	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	110	171	202	202
..	..	..	..	Springfield, Mass.	30	65	..	114
41	58	93	121	Stamford, Conn.	..	..	..	..
3	10	9	16	Syracuse, N. Y.	38	23	75	41
..	..	..	..	Trenton, N. J.	6	13	17	16
..	..	..	..	Utica, N. Y.	7	5	9	10
44	90	120	204	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	19	18	33	34
12	12	28	38	White Plains, N. Y.	6	17	15	26
74	46	140	98	Wilmington, Del.	7	12	9	18
81	110	205	257	Worcester, Mass.	..	..	..	..
59	34	164	97	Yonkers, N. Y.	..	..	..	..
2497	3476	4603	5288	Totals	1897	2140	3515	3378
—28.2		—13.0		*Percent Change*	—11.4		+4.1	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

DEGREE-DAY INDEX: Milder weather prevailed up to February 28, according to the Socony-Vacuum weighted degree-day formula. In the Eastern States the index revealed weather 12.6% warmer than normal on that date, 8% warmer in the Midwest.

FUELOIL STOCKS: Stocks of distillate heating oils at refineries, terminals or in transit east of the Rockies on March 7 were 54,963,000 barrels, compared with 42,545,000 barrels on March 8

(*Please turn to page* 198)

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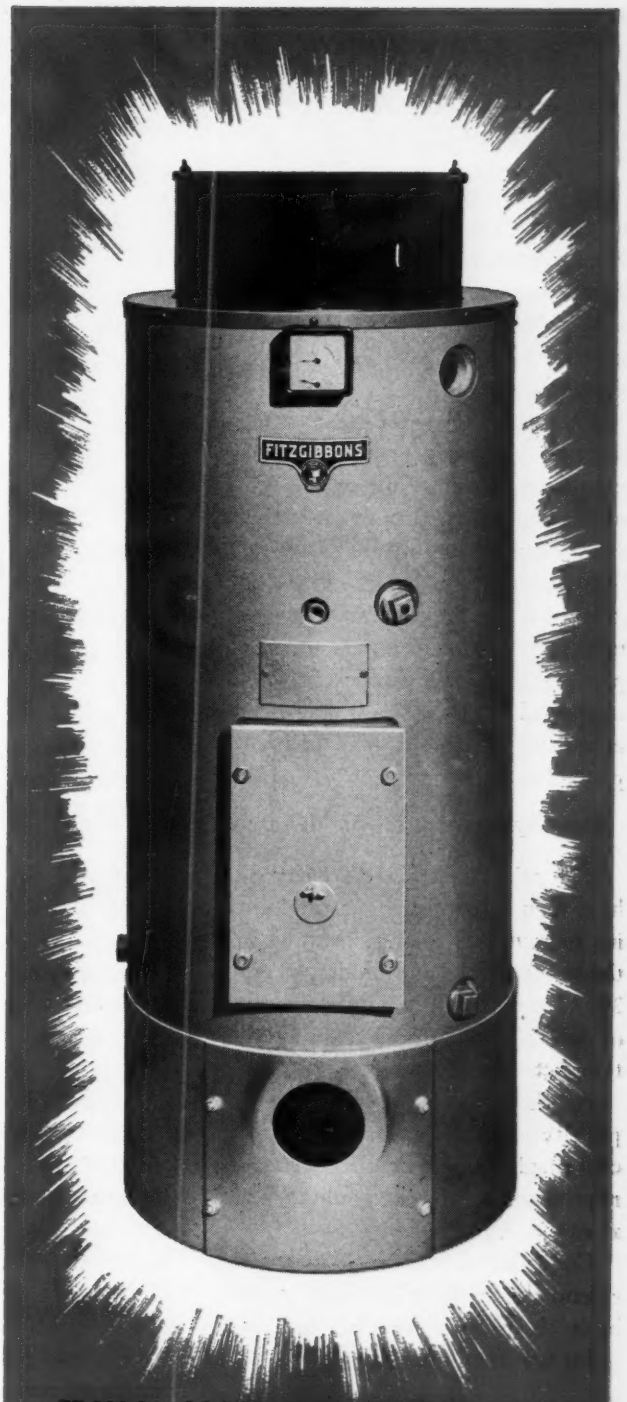
WITH ALL THE FEATURES MOST WANTED FOR SMALL HOMES

The #7701 Fitzgibbons Boiler

FOR ALL TYPES OF HOT WATER HEATING SYSTEMS



77,000 Btu. S.B.I. Net Rating; 115,500 Btu. Maximum Gross Output. Overall height, 61½ inches; diameter, 24 inches. A.S.M.E. Code Construction.

● Now you can recommend a quality constructed boiler for small home jobs. It's the new Fitzgibbons #7701 steel boiler—the result of years of careful planning and testing to design a product that offers every famous Fitzgibbons quality characteristic at a competitive price!

It's got every Fitzgibbons design and performance feature—"flange" quality steel construction, quick pick-up, excellent efficiency, large combustion volume, simplified installation and servicing. Domestic hot water, *without a storage tank,* is furnished by a new, "oversize" TANKSAVER® rated at 3 gpm.

The #7701 will be a hit with your customers! Check with your local jobber or Fitzgibbons representative, or use the coupon at right for full details and specifications.

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Please send me the new #7701 Steel Boiler Catalog.

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City.....State.....

F.O.-4

Government Influences on Fuels

by
Milburn Petty

WASHINGTON—All signs now point to the continuance of the Petroleum Administration for Defense—on a stripped-down basis—as part of the semi-permanent mobilization organization, planned by the Eisenhower Administration.

The search is on for an oil man to succeed J. Ed Warren as deputy petroleum administrator who is so set on leaving that he has reservations to sail for Europe on July 3.

Indications are that the PAD divisions now handling refining, programming, production, materials, financing, plant security and manpower will be continued with a small but experienced staff which could be quickly expanded in an emergency.

Standby controls Bill debated

All price controls on everything have been suspended—but the authority to reimpose ceilings continues on the statute books until midnight April 30. Materials will be under some sort of controls until the Defense Production Act expires June 30.

At the very least, allocation and priority controls on materials will be continued after June to provide for requirements of the military and atomic energy programs.

Congress, at the very most, may extend the controls law on a standby basis—both as to materials and prices —for use in an emergency.

May revive OGD, continue PAD

With the Eisenhower Administration definitely planning some sort of centralized defense mobilization agency—to handle what's left of material controls after June—there were many oil leaders who believed that the PAD should be continued "or else the bureaucrats might rush in and grab control of oil and gas."

It has been suggested to Interior Secretary McKay that the department's oil and gas division be reactivated to handle the peacetime petroleum functions while the PAD would be limited to defense matters such as the aviation gasoline program.

In this way, the PAD would die when the mobilization program ends. But, in the meantime, petroleum matters would be handled by a separate, vertical organization (staffed by oil men) instead of being lumped with all other industries in an over-all defense set-up. And when the PAD is finally folded, there would be the OGD as the Industry's contact with government.

PAD sees no Over-expansion yet

Despite the concern expressed by some oil industry leaders, the topmost PAD officials insist that unused—reserve—capacity is not "excessive" either from the long or short range viewpoint.

There was a pick-up in refinery construction applications during the first quarter, as compared with the last quarter of 1952. But it was not enough to provide the additional refining capacity which the PAD officials figure is needed to continue meeting current demand increasing at the rate of 5% per year—and still provide the "normal" reserve of 10% to 15%.

Replying to industry protests about creating a "Frankenstein monster" of excess capacity, the military—while expressing sympathy for the economic problems involved—said that they are still not satisfied there is enough oil capacity to face an all-out emergency.

Coal hits imported Oil, Gas

The coal people are battling against imported residual fueloil on all fronts, sponsoring bills to limit imports to 5% of domestic demand and trying to talk the State Department into seeking voluntary cut-backs by the importers.

Broadening their attack, the coal interests are now opposing imports of natural gas from Canada and Mexico.

Bills have been introduced to restrict the importation of gas where the Federal Power Commission finds that this "would result in economic dislocation, unemployment or injury to competing fuel industries in the United States."

Mainly, the backing for these bills has come from the lignite coal regions of the West, particularly the Rocky Mountain area, which contends that they face a "flood" of Canadian gas.

Also, there have been proposals to pipe gas from Mexico all the way to the Ohio River Valley.

Imports divide Independents

A real battle royal among independents in the oil industry's three branches is shaping up over the imports issue.

Independent refiners have taken up the cudgel against independent marketers who have opposed any restrictions on imported residual (which the refiners contend has "supplanted" domestically-produced residual).

Earlier, Secretary Harry Hilts of the Empire State Petroleum Association, had said that the non-integrated refiner's ills were not due to imports but rather to "failure of domestic crude oil to respond to the laws of supply and demand."

Independent Petroleum Association of America, representing the producers, has proposed that all oil imports be restricted by law to not over 10% of domestic demand.

An all-out battle against anti-import legislation is being waged by the National Oil Jobbers Council which contends that the domestic industry cannot supply residual fuel demand and still follow good conservation practices. Some distributors face ruin if imports are restricted, NOJC said.

Import Issue Put Up to Ike

President Eisenhower has been requested to call a conference of oil importers with a view to a voluntary solution of the import problem. Also, it has been urged that the National Petroleum Council study the impact of imports—particularly residual.

Both suggestions came from the Independent Refiners Association of America, headed by M. H. Robineau.

Shell Settles Case With FTC

Without admitting or denying "exclusive dealing" charges in the sale of fueloil, Shell Oil Co. has agreed with the Federal Trade Commission to refrain from requiring a purchaser to buy products only from Shell, refusing to sell a buyer because he has failed to "paint or keep painted in a particular manner his equipment," and engaging in any "exclusive dealing."

Letters

Editor:

As an interested and rather envious reader of your account of the Gulfstream Chapter of the Oil Heat Industry (March 1953, page 26), I want to point out what I hope was an innocent mistake on the part of your compositor.

It represented a gross underestimate of the productive facilities of one of our control manufacturer executives, you will agree I'm sure. The item reported that the group drank a toast to Mr. & Mrs Jim Owens of Mercoid, Chicago, who had received word during their dinner that their "fourth" grandchild had arrived. Not so! The fact is that Grandpa and Grandma had just been told of the arrival of their "four*teenth*" grandchild.

Probably in these days of small families the typesetter just naturally reached for the "4" instead of the "14" when he set the item and I think it only fitting that you apologize to Jim and his Missus.

Oops, hold the phone a minute. The latest bulletin, just flashed, confirms the arrival of the Owens' fifteenth grandchild!

Jim can now either run for President—he's well on the way to having enough votes—or he can organize a football team and have a couple of substitutes left over.

ROVER

Editor's note: You are so right! Our apologies for the unintentional slight of permitting "four" to slip by for "fourteen" and most hearty congratulations for the "fifteenth"—until the next bulletin, that is.

❖

Secondary fueloil Storage was 59% filled on Jan. 31

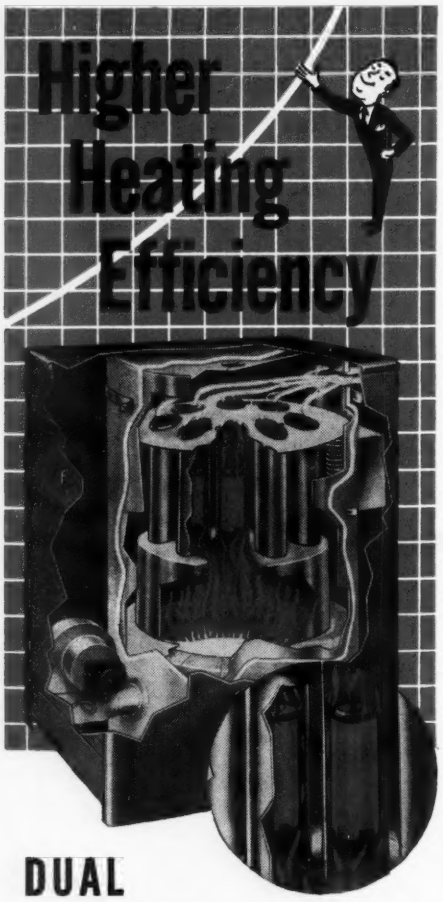
SECONDARY INVENTORIES of the four major petroleum products in the country, exclusive of PAD District 5, totaled 50.2 million barrels as of January 31, 1953, representing an increase of 1.4 million barrels over the previous month and a more substantial gain of 3.1 million barrels over stocks on hand a year ago. As reported by the Bureau

Folks look here for wind direction...

Looking in the 'yellow pages' of the telephone directory just "comes naturally" to 9 out of 10 shoppers. It's a national habit that's been building up for more than 60 years.

That's why it makes sound selling sense to advertise the products and services you sell in the 'yellow pages'. They reach new prospects and old customers...work for you 24 hours a day in stores, homes and offices all over town.

The 'yellow pages' will prove a real business builder for you. Let the Directory representative show you how to use them effectively. Call him at your local telephone company.



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Installation economy for you **because the Dual 8 is easy to install and service: the cabinet is installed after all piping is completed; all controls are on the front of the boiler; the intensifier tubes are readily accessible.** ***Economy for homeowners*** **because they get faster heat with less fuel: the intensifier tubes see to that by cutting chimney heat loss and speeding heat transfer. Then add A. S. M. E. Code Construction and contagious customer satisfaction ...that's a recipe for more sales and more profit.**

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*U. S. PAT. NO. 2,560,275

Acme DUAL 8 BOILER BURNER UNITS

ACME HEATING DIVISION
THE UNITED TOOL and DIE CO.

Table 1—Secondary Inventories and Storage Capacity—U. S. by PAD District

(Thousands of barrels)

PAD DISTRICT (See map below)	Secondary inventories 1952 Dec. 31	Nov. 30	Oct. 31	Sept. 30	Aug. 31	July 31	1951 Dec. 31	Nov. 30	Oct. 31	Bulk storage capacity, 1952 Oct. 31	July 31
TOTAL											
United States	52,233	55,965	57,658	58,293	55,844	53,406	49,864	53,629	56,644	n.a.	n.a.
PAD 1	22,337	24,746	25,724	26,294	24,792	22,482	21,547	22,923	26,088	36,816	36,10
PAD 2	19,829	20,263	20,822	21,005	20,091	19,785	18,754	20,332	20,428	38,381	39,46
PAD 3	5,188	5,883	5,971	5,888	5,789	5,959	5,038	5,562	5,790	9,564	10,01
PAD 4	1,450	1,422	1,458	1,580	1,590	1,475	1,266	1,445	1,379	2,628	2,66
PAD 5[1]	3,429	3,652	3,683	3,526	3,582	3,705	3,259	3,367	2,959	n.a.	n.a.
GASOLINE											
United States	19,514	19,915	20,407	20,090	20,220	21,082	18,600	19,623	18,616	n.a.	n.a.
PAD 1	5,341	5,875	6,253	5,843	5,756	5,838	5,509	5,822	5,636	9,300	9,5
PAD 2	8,104	7,902	8,300	8,309	8,282	8,839	7,729	8,108	7,628	16,832	18,1
PAD 3	3,194	3,245	2,967	2,952	3,018	3,150	2,701	2,917	2,883	4,693	4,9
PAD 4	863	830	838	967	1,023	926	764	868	809	1,577	1,6
PAD 5[1]	2,012	2,063	2,049	2,019	2,141	2,329	1,897	1,908	1,660	n.a.	n.a.
KEROSENE (INC. RANGE OIL)											
United States	7,333	8,032	8,335	8,293	7,973	7,708	7,555	8,129	8,829	n.a.	n.a.
PAD 1	2,890	3,349	3,485	3,547	3,420	3,347	3,113	3,255	3,806	5,314	5,278
PAD 2	3,458	3,664	3,780	3,718	3,547	3,346	3,568	3,896	4,017	6,380	6,441
PAD 3	780	821	859	822	808	813	664	757	796	1,644	1,583
PAD 4	98	93	99	99	91	92	99	101	94	172	183
PAD 5[1]	107	105	112	107	107	110	111	120	116	n.a.	n.a.
DISTILLATE FUELS[2]											
United States	19,103	21,508	22,190	22,671	20,609	17,463	18,210	19,622	21,551	n.a.	n.a.
PAD 1	10,062	11,616	11,940	12,579	11,354	9,048	9,267	9,963	11,973	15,913	15,125
PAD 2	6,494	6,795	6,917	7,004	6,488	5,893	6,176	6,769	6,785	12,231	12,347
PAD 3	914	1,300	1,480	1,273	1,077	948	1,144	1,280	1,217	1,809	1,864
PAD 4	483	493	511	506	469	444	397	470	467	844	820
PAD 5[1]	1,150	1,304	1,342	1,309	1,221	1,130	1,226	1,140	1,109	n.a.	n.a.
RESIDUAL FUELS[3]											
United States	6,283	6,511	6,726	7,239	7,042	7,153	5,499	6,255	7,648	n.a.	n.a.
PAD 1	4,044	3,907	4,046	4,325	4,262	4,249	3,658	3,884	4,673	6,289	6,178
PAD 2	1,773	1,901	1,825	1,974	1,774	1,707	1,281	1,558	1,998	2,938	2,516
PAD 3	300	517	665	841	886	1,048	529	608	894	1,418	1,699
PAD 4	6	6	10	8	7	13	6	6	9	35	21
PAD 5[1]	160	180	180	91	113	136	25	199	74	n.a.	n.a.

n.a. Not available.
[1] Data for District 5 supplied by the U.S. Bureau of Mines.
[2] Numbers 1-4 fuel oil and light Diesel type oil.
[3] Numbers 5-6 fuel oil and heavy Diesel oil.

of Census, secondary inventories filled approximately 59% of storage in PAD Districts 1, 2, 3 and 4, which amounted to 85.0 million barrels on January 31, compared with 63% on October 31, 1952, when it was checked last.

Secondary inventories were distributed: 22.9 million barrels in PAD District 1, 20.6 million in District 2, 5.2 million in District 3 and 1.5 million in District 4. In each district stocks were slightly higher than they were on December 31 and, except for District 3, were above January 31 last year.

Secondary storage was located by Districts as follows: 36.2 million barrels in PAD District 1, 36.5 million in District 2, 9.6 million in District 3 and 2.7 million in District 4. Of total storage, 31.3 million barrels were assigned to gasoline, 13.1 million to kerosene, 30.1 million to distillates and 10.5 million to residual fuels.

Table 2 breaks down the January 31 secondary inventory and bulk storage capacity for the four Districts. Table 1 is a tabulation of similar data as of December 31, 1952.

❖

Dept. of Labor reports an Increase in housing Starts

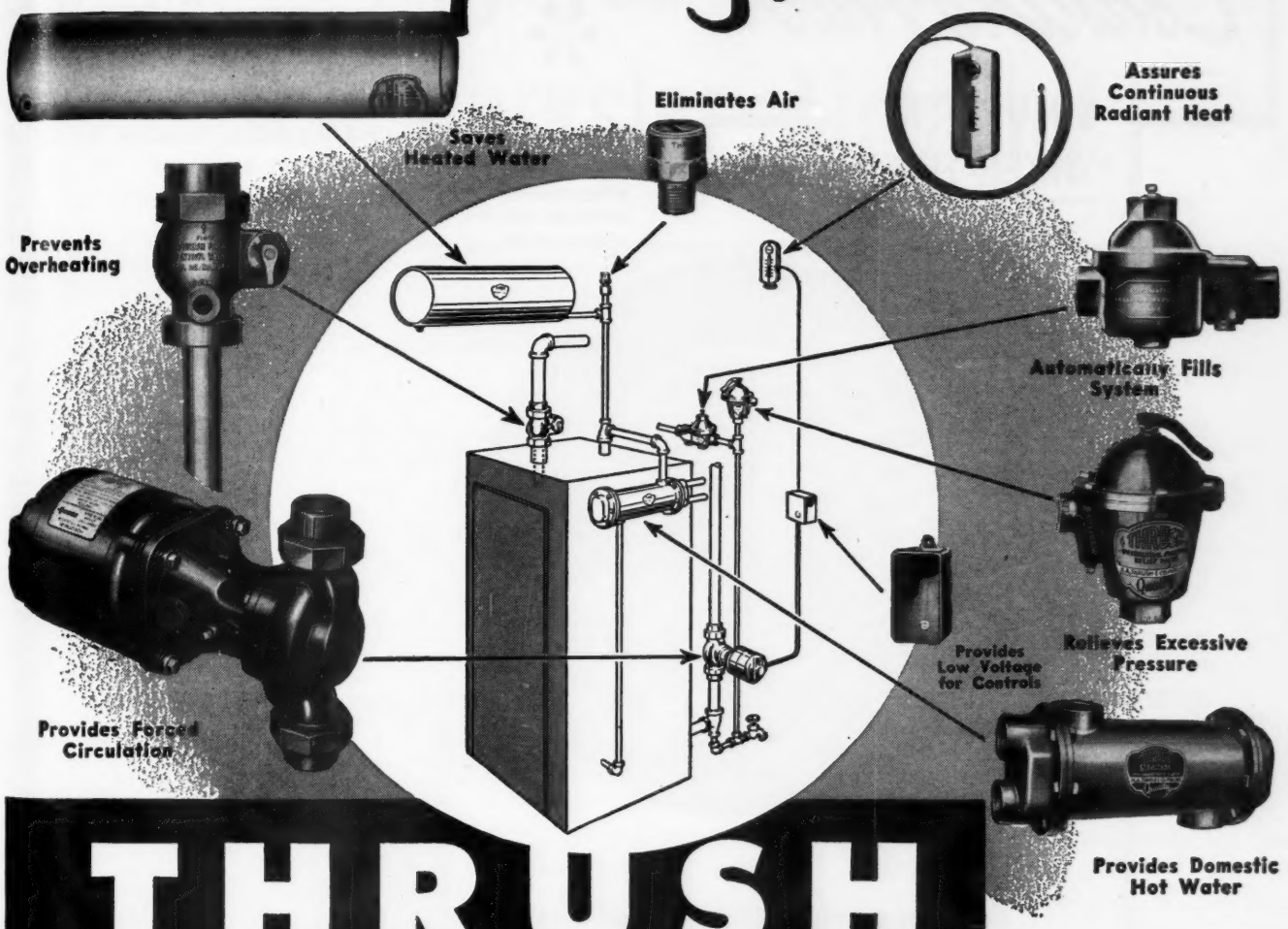
AN UPTURN in housing starts began in February, the U. S. Labor Depart-

Table 2

Product	*Secondary Inventories 1/31/53*	*1/31/52*	*Bulk Storage Capacity 1/31/53*	*Secondary Inventories 1/31/53*	*1/31/52*	*Bulk Storage Capacity 1/31/53*
		PAD 1			PAD 2	
Total	22,902	19,643	36,211	20,579	20,240	36,449
Gasoline	5,788	5,565	9,028	9,068	8,890	15,830
Kerosene	2,854	2,638	5,093	3,342	3,662	6,227
Distillate[1]	10,092	8,114	15,803	6,523	6,389	11,628
Residual[2]	4,168	3,326	6,287	1,646	1,299	2,764
		PAD 3			PAD 4	
Total	5,215	5,825	9,592	1,530	1,377	2,705
Gasoline	3,093	3,345	4,785	902	845	1,618
Kerosene	785	680	1,596	99	108	177
Distillate[1]	1,033	1,123	1,800	523	418	893
Residual[2]	304	677	1,411	6	6	17

[1] Number 1-4 fueloil and light Diesel type oil.
[2] Numbers 5-6 fueloil and heavy Diesel oil.
Note: Data for PAD District 5 and for the United States as a whole not available at time of publication.

Sell Completely Automatic



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flow control HOT WATER HEATING

SUCCESSFUL DEALERS, who install Thrush Flow Control Systems on all their hot water heating jobs, tell us that every Thrush installation sells another one. Enthusiastic home owners tell their friends . . . build good will . . . and that means more sales and profit for you.

Thrush Flow Control System has everything to make sales easier and satisfy customers . . . unlimited choice of heating units (baseboards, radiant panels, convectors, etc.,) . . . fuel economy . . . small piping . . . comfort (less than 1° room temperature variation) . . . plenty of domestic water from the one boiler and years of trouble-free service. Sell the best heating equipment — SELL THRUSH. See your wholesaler for free Sales Helps and Free Engineering Service or write Dept. C-4 today!

H. A. THRUSH & COMPANY
PERU, INDIANA

Assures a Continuous Flow of Radiant Heat

TORRINGTON'S
Coasting Hub
SOLVES THE
"AFTER-FIRE"
PROBLEM

Precision rolls and springs within camplate guarantee long life, positive action

APPROVED BY UNDERWRITERS' LABORATORIES

- Maintains air supply until fire burns out clean!
- Eliminates soot, smoke and shudder!
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- Requires no electrical work to install!
- Goes anywhere a standard wheel is used!
- Fits any standard shaft extension!
- Furnished to drive any standard coupling!
- Provides new, clinching sales appeal at low cost!
- Every oil burner is a natural replacement prospect!

For complete information on the Fan with the Coasting Hub write Torrington today . . .

The TORRINGTON MANUFACTURING COMPANY
TORRINGTON, CONNECTICUT

Western Division: Van Nuys, California
In Canada: TMCo., Ltd., Oakville, Ontario

ment's Bureau of Labor Statistics, reports, when 77,000 new permanent, nonfarm dwelling units were begun. This is an increase of 6,000 units, or 8%, over January and nearly equals the February 1952 figure, despite severe storms in the latter half of the month in some sections of the country.

The total for January and February 1953, the Bureau indicates, is 148,000 units, about 5,400 units above 1952, but less than those two months in 1950 and 1951. Most of February's increase this year was in the North and West, with a somewhat lower rate in the Southern regions.

Total house building, private and public, was proceeding at a seasonally adjusted annual rate of 1,227,000 units in February, as indicated by preliminary estimates. Final revised estimate for November was 1,159,000 units; preliminary rates for December and January were 1,237,000 and 1,157,000.

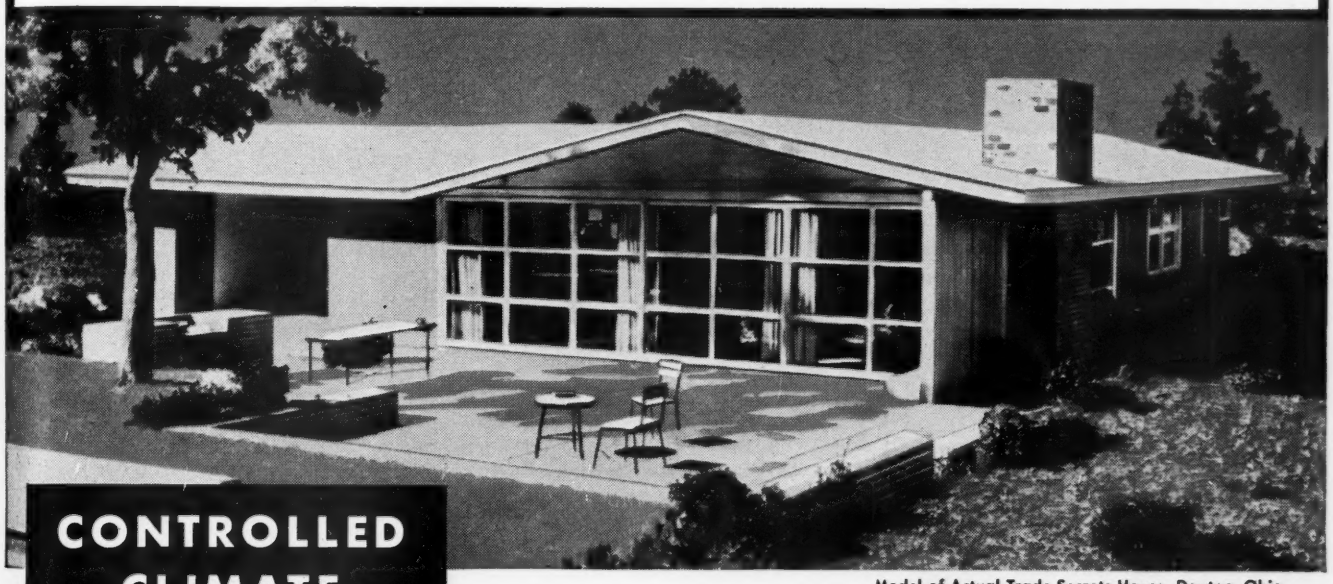
ICHAM analyzes 1952 space heater shipments

AN ANALYSIS of distribution of vaporizing pot-type oilburning space heaters by states for the year 1952 has been issued by the Institute of Cooking and Heating Appliance Manufacturers, Washington 8, D. C., along with an aggregate showing distribution from January 1, 1946 through December 31, 1952.

The 17 contributing companies, says the Institute, are estimated to have accounted for 75% of the industry's factory shipments of pot-type oil heaters during the calendar year 1952. A total of 330,207 units was shipped during 1952. These cover sales to retail dealers only. For the seven-year period, 1946 through 1952, the report shows a total of 4,530,148 units shipped. This total is based on a varying sample which includes sales to wholesalers, as well as retail dealers.

By states, the greatest number of vaporizing pot-type oilburning space heaters during 1952 were shipped to North Carolina, where retail dealers purchased 36,999 from the manufacturers who cooperated in the report; Illinois was second with 24,006, Mich-

Why you should sell Chrysler Airtemp!



Model of Actual Trade Secrets House, Dayton, Ohio.

CONTROLLED CLIMATE
Approximately $1.00 per square foot!*

This Trade Secrets House, completed this year in Dayton, Ohio, has Year 'Round "Controlled Climate."

The 96000 B.T.U. of heating and 3 H.P. of cooling keep this modern home of 1340 square feet in the Comfort Zone—regardless of extremes of outside weather. Air is cooled and dehumidified in summer; heated and humidified in winter . . . it's filtered and circulated every day of the year.

THIS CAN BE A PROFITABLE MARKET FOR YOU.

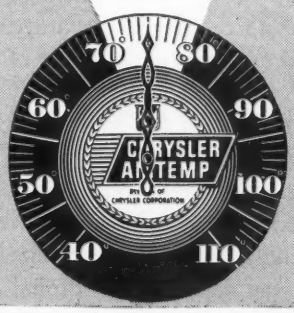
You make Extra Profits . . . you sell winter heating *and* summer cooling.

Your Selling Job is Easier . . . because people have confidence in the quality of Chrysler Airtemp products.

National Advertising creates prospects for you . . . Millions of people are getting the Chrysler Airtemp message every month.

Get the facts right away. See how you can get into the Year 'Round Air Conditioning business at a profit.

Comfort Zone



*Installed prices vary slightly according to locality.

Chrysler Airtemp

HEATING • AIR CONDITIONING
***for* HOMES, BUSINESS, INDUSTRY**

Airtemp Division, Chrysler Corporation, Dayton 1, Ohio

Guaranteed by Good Housekeeping

Airtemp Division, Chrysler Corporation F&OH-4-53
P.O. Box 1037, Dayton 1, Ohio
Please send full details about the Chrysler Airtemp Comfort Zone.

Name_____

Address_____ Phone_____

City_____ Zone____ State_____

fueloil & oilheat

Let QUALITY Be Your Guide!

specify couplings by *Guardian*

and get these exclusive features . . .

1. "SILENT TENSION"*

Provides clearance for rapid assembly and snug fit, reducing wear. Extruded aluminum sleeve formed under closer tolerance obsoletes former production of steel sleeve with embossed splines.

*Patent applied for. There is only one "Silent Tension" splined sleeve coupling—Guardian makes it.

2. "DYNA-LINE" FABRICATION

An exclusive Guardian process aligns end-fittings and flex-element. Spins them into union while in a dynamic state—running true.

3. NEW "TRUE-FLEX" RUBBER ELEMENT

Special synthetic reinforced. Properly engineered to correct O.D. and durometer for maximum service life.

HANDY SERVICEMEN'S KIT

Meets 97% of service needs. Get one—keep it filled for extra profits on coupling replacements.

Insist on Guardian Quality . . . It is True Economy!

Write for Complete Data on Guardian Flexible Couplings and Guardian Oil Heat Valves.

Guardian PRODUCTS CORP.
COUPLING DIVISION

Dept. F-43, 1231 East Second Street

Michigan City, Indiana

DISTRIBUTION OF POT-TYPE OILBURNING SPACE HEATERS

	1952*	1/1/46 through 12/31/52**
Alabama	1,178	50,229
Arizona	29	9,029
Arkansas	888	32,487
California	320	77,776
Colorado	604	43,109
Connecticut	893	30,938
Delaware	1,229	18,405
Dist. of Columbia	2,931	27,926
Florida	19,137	135,021
Georgia	11,447	99,425
Idaho	2,753	31,141
Illinois	24,006	377,474
Indiana	18,384	225,144
Iowa	12,790	196,340
Kansas	927	52,229
Kentucky	5,431	62,626
Louisiana	31	14,132
Maine	2,169	33,998
Maryland	7,247	92,596
Massachusetts	1,174	52,522
Michigan	23,615	306,745
Minnesota	11,457	213,639
Mississippi	60	20,191
Missouri	17,506	220,569
Montana	1,052	29,199
Nebraska	3,875	78,814
Nevada	254	9,993
New Hampshire	690	15,635
New Jersey	1,044	56,172
New Mexico	40	11,588
New York	10,923	189,574
North Carolina	36,999	289,491
North Dakota	3,558	45,945
Ohio	16,714	203,554
Oklahoma	11	21,576
Oregon	6,328	107,121
Pennsylvania	12,215	131,546
Rhode Island	739	18,523
South Carolina	15,902	113,026
South Dakota	3,930	54,201
Tennessee	5,228	123,162
Texas	133	56,774
Utah	802	22,119
Vermont	1,107	18,055
Virginia	20,528	171,805
Washington	10,294	149,003
West Virginia	600	16,835
Wisconsin	10,922	162,479
Wyoming	113	10,267
TOTAL	330,207	4,530,148

*Sales to retail dealers only.
**Includes sales to wholesalers as well as retail dealers.

igan was third with 23,615 and Virginia was fourth with 20,528. During the seven-year period the highest totals were reported in the following states: Illinois, 377,474; Michigan, 306,745; North Carolina, 289,491; Indiana, 225,144.

The table reproduces the shipments reported in the ICHAM report during 1952 by states and totals by states for the period January 1, 1946 through December 31, 1952.

❖

Synthetics uneconomical, says NPC Report

THE REPORT of the National Petroleum Council Committee on Synthetic Liquid Fuels Production Costs, headed by W. S. S. Rodgers, chairman of The Texas Company, issued on February 27, concluded that the Bureau of Mines proposals for the manufacture of synthetic gasoline from coal and oil shale "are definitely uneconomical under present conditions" and that "the need for a synthetic liquid fuel industry in this country is still in the distant future."

The two-and-a-half-year investigation undertaken by the NPC at the request of the Secretary of the Interior, developed that gasoline manufactured from oil shale would cost the wholesale producer 29.4 cents a gallon and gasoline made from proposed hydrogenation processes would cost at least 36.3 cents a gallon. These wholesale prices would exceed the current wholesale price of gasoline refined from crude petroleum, which is about 12 cents a gallon at the refinery or terminal. Prices do not include sales taxes, marketing and transportation expenses.

The committee declared that "there is some likelihood of further reducing the cost of manufactured liquid synthetic fuels by continued research in oil shale and Fischer-Tropsch processing of coal. Coal hydrogenation, on the other hand, requires drastic improvements in existing methods to permit economic operation. Such developments are not foreseen at the present time."

Since 1944 over $74 million has been appropriated for the Bureau of Mines Office of Synthetic Liquid Fuels, whose work has been concerned principally with three methods: hydrogenation of coal, recovery and refining of oil from oil shale and gasification of coal and conversion of the gas to liquid fuel by a Fischer-Tropsch process. In estimating its costs the NPC committee figured a return of 6% on total investment, but its report continued that "it is very doubtful that capital could be

How Many Prospects Accept it... from Your Salesmen?

THE salesman shown above is a Timken Silent Automatic salesman who is saying to the prospect, "There are four copies —you'll have to bear down hard."

He was given a TSA aptitude and ability test before he was hired by his TSA dealer-employer. He was trained at a TSA factory sales school. He is the beneficiary of a well-rounded compensation plan that is fair to both himself and his dealer. His work is carefully supervised in accordance with proved practices. He is a capable, going-places salesman who laughs at price competition and closes most of his sales on the first call. He is making big money for both himself and his TSA dealer-employer and is happy as a lark with his job.

Would you like to have one or more salesmen just like him? If you believe, with us, that *better equipment better sold* is the answer to most of today's problems, drop us a line. We'd like to talk with you.

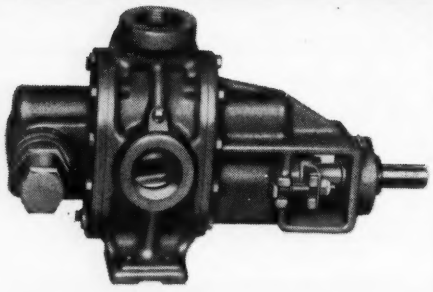
Different and better equipment, different and better (and more) advertising, different and better selling methods—these are only three of many reasons why Timken Silent Automatic dealers are the big money-makers of the heating equipment business. The 1953 Timken Silent Automatic merchandising program may be the answer to *your* problems. Why not find out?

TIMKEN
Silent Automatic
HEAT

TIMKEN SILENT AUTOMATIC DIVISION
The Timken-Detroit Axle Company • Jackson, Michigan
The Timken-Detroit Axle Company of Canada, Ltd., Toronto, Ont.

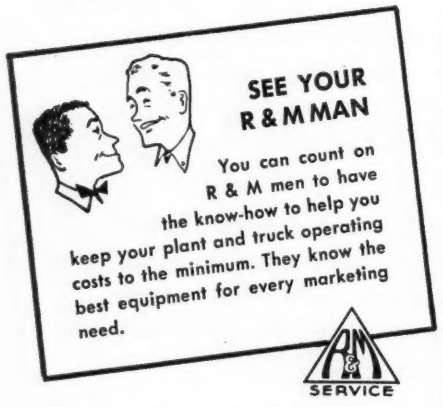
Be Accepted TSA Standard
TRADE MARK REGISTERED

RENICK & MAHONEY, INC.



ROPER TANK TRUCK PUMPS

Built for long-lived, efficient operation, with economical, smooth and quiet delivery. Split gland makes repacking easy. Handle all grades gasoline, kerosene, diesel fuel and fuel oils. Easily serviced without disturbing pipe connections or drive coupling.


SEE YOUR R & M MAN
You can count on R & M men to have the know-how to help you keep your plant and truck operating costs to the minimum. They know the best equipment for every marketing need.
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SERVICE

Send for the R & M complete catalog

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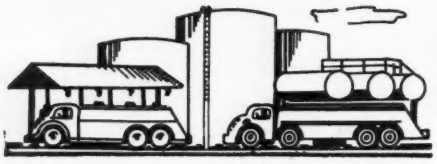
380 Second Avenue (at 22nd Street)

New York 10, N. Y.

Telephone ALgonquin 4-4202

Complete Equipment for the Oil Trade



attracted to such a speculative venture at this low rate of return." A greater return, of course, would increase the cost of all processes.

❖

Dodge sees continuing residential building Boom

F. W. DODGE CORP., based upon its reports of construction that has just started or is about to start in the 37 eastern states for the first two months of this year, sees the residential building boom continuing for a while. Twenty per cent more construction has been reported this year over the first two months of 1952, although the February figure was down 9% from January.

Dodge total construction figures for the two months were in excess of $2 billion, up 17% from the 1952 figure. The February figures show: all classes down 5% from January, up 15% from February 1952; nonresidential down 8% from January, up 24% from February 1952; residential down 9% from January, up 6% from February 1952.

Discoveries topped Production in 1952, oil Reserves at Peak

THE ANNUAL REPORT of the American Petroleum Institute and American Gas Association on the nation's proved reserves of liquid petroleum and natural gas shows the reserves at an all-time peak in 1952. Proved reserves of liquid petroleum rose to 32.9 billion barrels as of last December 31, an increase of more than 764 million barrels over 1951's former peak; natural gas reserves rose to 199.7 trillion cubic feet, increasing 5.9 trillion cubic feet over the 1951 record.

The substantial increases in both categories indicate that petroleum and natural gas were added to known underground stocks in spite of new record-high production levels during 1952. The report lists known supplies buried in the ground, the location and extent of which have been established. The report excludes estimates of oill and gas which may be found later under the vast acreage of ground in the United States known to be favorable to the accumulation of oil and gas but

ESTIMATED PROVED RESERVES OF LIQUID HYDROCARBONS IN THE UNITED STATES
(Barrels of 32 U. S. Gallons)

	Proved Reserves as of December 31, 1951	*Production During 1952*	*Proved Reserves as of December 31, 1952*
Alabama	7,860,000	1,085,000	15,635,000
Arkansas	336,458,000	27,544,000	352,261,000
California**	3,760,870,000	359,450,000	3,854,171,000
Colorado	325,178,000	30,390,000	305,691,000
Illinois	646,335,000	61,010,000	619,461,000
Indiana	50,667,000	11,871,000	55,535,000
Kansas	791,946,000	114,145,000	916,989,000
Kentucky	58,549,000	11,789,000	55,565,000
Louisiana**	2,284,781,000	226,447,000	2,557,530,000
Michigan	64,113,000	13,369,000	57,411,000
Mississippi	385,387,000	34,512,000	358,809,000
Montana	108,418,000	9,659,000	156,181,000
Nebraska	15,918,000	2,389,000	21,836,000
New Mexico	611,640,000	59,850,000	733,358,000
New York	57,061,000	4,207,000	52,854,000
North Dakota	4,983,000	1,420,000	76,203,000
Ohio	26,436,000	3,350,000	27,390,000
Oklahoma	1,476,457,000	188,898,000	1,557,620,000
Pennsylvania	95,002,000	11,137,000	121,724,000
Texas**	15,314,964,000	1,009,607,000	14,916,168,000
Utah	29,683,000	1,704,000	42,399,000
West Virginia	38,762,000	2,650,000	37,212,000
Wyoming	973,440,000	69,752,000	1,064,722,000
Miscellaneous†	3,123,000	530,000	3,829,000
Total	27,468,031,000	2,256,765,000	27,960,554,000

***Includes off-shore reserves.*
†Under Miscellaneous are included Florida, Missouri, Tennessee, Virginia.

More of what you want in CHEVROLET Advance-Design Trucks

—*and here are 4 powerful reasons why:*

NEW ENGINE POWER—TEAMED WITH LOWER COSTS! The improved Loadmaster engine with a new high compression ratio of 7.1 to 1, now delivers even more power. This great engine is standard on 5000 and 6000 Series heavy-duty and forward-control models—optional on 4000 Series heavy-duty models. In light- and medium-duty models the Thriftmaster engine offers traditional Chevrolet economy.

NEW STAYING POWER—FOR GREATER DURABILITY! Frames are heavier, stronger, more durable in all 1953 Chevrolet trucks. You'll find greater ruggedness and stamina. You'll find these trucks even brawnier and sturdier than Chevrolet trucks in past years—trucks that have long been famous for those very qualities. And this heavier construction brings new comfort and freedom from fatigue to drivers, too.

NEW BRAKING POWER—FOR QUICKER, SURER, SAFER STOPS! Two types of brakes on 1953 Chevrolet advance-design trucks provide greater stopping power and greater durability. "Torque-Action" brakes are standard front and rear on all trucks up to 4000 Series heavy-duty models. Extra-large "Torque-Action" brakes in front, "Twin-Action" type in rear are on Series 4000, 5000 and 6000 heavy-duty models.

NEW ECONOMY—LOWERS COST OF EVERY TON-MILE HAULED! Expect greater economy with Chevrolet trucks. New and greater stamina with extra gasoline economy cuts operating costs, maintenance costs in heavy-duty models with Loadmaster engine. *And these great trucks list for less than comparable models of any other make!* Chevrolet Division of General Motors, Detroit 2, Mich.

CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

TWO GREAT VALVE-IN-HEAD ENGINES—the Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load. **POWER-JET CARBURETOR**—for smooth, quick acceleration response. **DIAPHRAGM SPRING CLUTCH**—for easy-action engagement. **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **HYPOID REAR AXLE**—for dependability and long life. **TORQUE-ACTION BRAKES**—on light-duty and medium-duty models and on front of heavy-duty models. **TWIN-ACTION REAR BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—for greater holding ability on heavy-duty models. **CAB SEAT**—with double deck springs for complete riding comfort. **VENTI-PANES**—for improved cab ventilation. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—for easier handling. **UNIT-DESIGNED BODIES**—for greater load protection. **ADVANCE-DESIGN STYLING**—for increased comfort and modern appearance.

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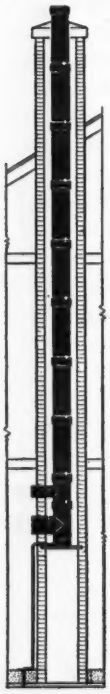
VITROLINER

CHIMNEY LINER

GUARANTEED to give effective and continuous service as a Chimney Liner for 10 years. Any material for replacement will be furnished without charge during this period.

Vitroliner vitreous enameled pipe is the best product on the market for protecting your chimney. It has been in use for over twenty years.

Modern heating equipment using modern fuels is so efficient that practically no heat is wasted by exhausting high flue gas temperatures into the chimney. Therefore the flue gases have a chance to condense before they are exhausted out of the chimney. This condensation contains acids which attack the mortar and brickwork.



When the Vitroliner Chimney Lining is installed in the chimney, all the products of combustion are vented inside of the liner and they do not touch the brickwork of the chimney.

- **ELIMINATES FIRE HAZARDS**
- **CREATES BETTER DRAFT**
- **REDUCES FUEL CONSUMPTION**
- **PREVENTS CONDENSATION DAMAGE**
- **ASSURES LONGER LIFE**

•

Recommended by many oilburning equipment manufacturers.

•

Ask about our insulated liners. Write for literature today.

CONDENSATION
ENGINEERING CORPORATION
3511 W. POTOMAC AVE., CHICAGO 51, ILL.

which is as yet untested.

Production of liquid petroleum in 1952 amounted to 2.5 billion barrels, up 60 million barrels over 1951, and natural gas produced totaled 8.6 trillion cubic feet, up 672 billion cubic feet over 1951. Both production levels exceeded all past records.

Liquid petroleum proved reserves include 27.9 billion barrels of crude oil, 5.0 billion barrels of natural gas liquids. Production in 1952 consisted of 2.2 billion barrels of crude oil, 284 million barrels of natural gas liquids.

New supplies of liquid petroleum developed in 1952 amounted to 3.3 billion barrels, which means that for every barrel of oil withdrawn from the ground, the industry found enough new oil to compensate for the 2.5 billion barrels produced, but also had three-quarters of a billion barrels left over for addition to proved reserves.

The report covers new discoveries, revisions of previous estimates and extension of known pools. It applies only to those reserves whose location and extent have been proved and measured.

Together with the domestic report, the Canadian Petroleum Association announced that proved reserves of liquid petroleum in western Canada amounted to 1.7 billion barrels as of December 31, an increase of 357 million barrels over the 1951 total. The provinces of Alberta, Manitoba, Saskatchewan and the northwestern Territories were included in the report.

The accompanying table shows estimated proved reserves of crude oil in the oil-producing states.

❖

Survey buying Intentions on Iowa, Wisconsin Farms

SURVEYS conducted by Wallaces' Farmer and Iowa Homestead, Des Moines, Ia., and the Wisconsin Agriculturist and Farmer, Racine, Wis., of the 1953 buying intentions of farm families in both states indicate that there is a market for 3,657 oilburners among this group in Iowa and 2,191 oilburners in Wisconsin. The survey was conducted among a representative group of farm families in both states and the returns projected by multiplying percentage figures by 203,159 farms in Iowa, 168,561 farms in Wisconsin.

In the table are shown the indicated buying intentions during 1953 for the listed products:

	Iowa	*Wisconsin*
Oilburners	3,657	2,191
Gasburners	609	169
Coal stokers	1,625	506
Basement furnaces	4,063	6,068
Floor furnaces	609	674
Space Heaters:		
Coal-wood	203	1,686
Oil	4,063	2,360
Other	609	—

❖

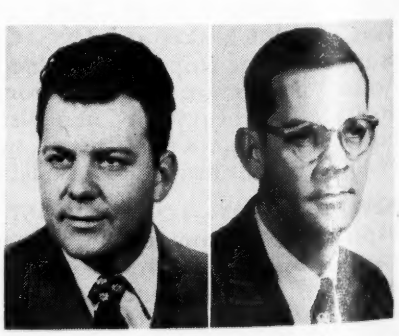
Names in the News

(*Begins on page 6*)

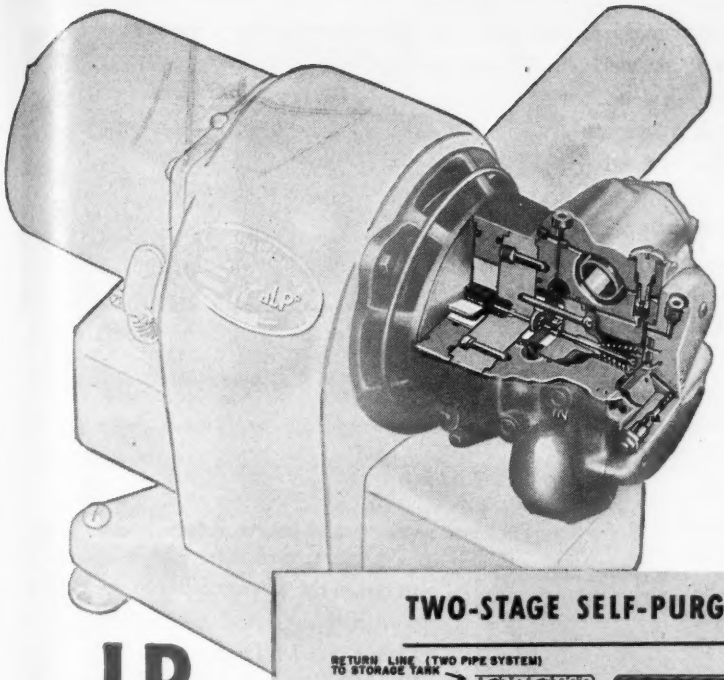
berg Co., Chicago. Braun Bros. are metropolitan Chicago representatives for Oil-O-Matic, Timken and Ace oilburners, handle fueloil as well as other heating lines.

Charles L. White is representing Tuthill Pump Co., Chicago, as eastern sales engineer. With headquarters at Elmont, L.I., N.Y., White is contacting pump users in the territory east of Rochester, N.Y. and Harrisburg, Pa. He boasts a background of 25 years in sales, application engineering and maintenance on both light and heavy oilburning equipment, and for many years represented a major oil company in the East.

Edward V. Sullivan has been promoted to sales manager, Fan Division, The Lau Blower Co., Dayton, Ohio; *Thomas H. Martin* has been named



Sullivan Martin

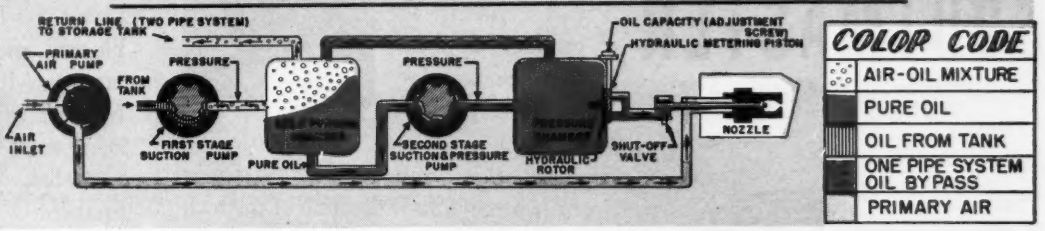


LOOK!

a new *Combustioneer* At a new LOW PRICE!

MODEL d LP

TWO-STAGE SELF-PURGING LOW PRESSURE OIL BURNER

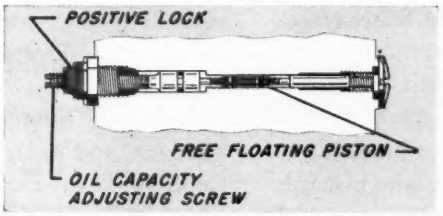


Yes, it's NEW, and EXCLUSIVE with ***Combustioneer!*** The ONLY low-pressure oil burner using the better two-stage pump principle . . . one pump to operate in suction only, and the other produces *pressure* to operate metering piston and shut-off valves! Draws oil vertically up to **15** feet, plus up to **38** feet horizontally, with buried tank. The exclusive *SELF-PURGING* reservoir insures *completely bubble-free* oil to the metering piston. ALL of these NEW advantages, at a NEW LOW PRICE! Read about the many other features which make ***Combustioneer*** the sales-building, profit-building Oil Burner for EVERY Dealer!

"Flip-Of-A-Finger" Control

Very precise "tuning" regulates fuel consumption from **.50** to **4.00** G.P.H. *while burner is operating.* Infinite variations, no fuel waste!

"Free-Floating" Piston



Meters oil-flow exactly. NO rods, levers, gears, pins, cams or springs. Floats in, motivated by, oil itself. Friction, wear and fatigue eliminated. Quiet, economical. Reduces service needs.

"Flo-Mist" Nozzle

High-pressure oil burners demand 100 lbs. pressure through needle-point openings. The ***Combustioneer*** low-pressure oil burner delivers oil to the nozzle at near zero lbs. pressure. Primary air and oil are mixed inside the nozzle, the mixture passes through an orifice **30** to **40** times as large as that on a high-pressure burner. Then the same blast tube air is added. Vaporization is finer, air and oil are mixed TWICE, resulting in a higher combustion efficiency.

Combustioneer exclusive features

- **"Free-Floating" Piston, hydraulically operated.**
- **Fuel Consumption controlled from .50 to 4.00 G.P.H.**
- **Clog-Proof Nozzle.**
- **Oil-air adjustable while running.**
- **Two-Stage Fuel Pump . . . Self-Purging Reservoir.**
- **Two-Unit Safety Control eliminates home hazards.**
- **Hydra-Vated Pump, quiet, low-cost, service-free**

For PROFIT . . . Get The Combustioneer Dealer Franchise!

You can offer your customers the unmatched ***Combustioneer*** Low-Pressure Oil Burner at a NEW LOW PRICE! You'll make easier sales, more sales, BIGGER profits! Write TODAY for FACTS about the ***Combustioneer*** Dealer Franchise!

Combustioneer **Division**
THE STEEL PRODUCTS ENGINEERING CO.
1294 W. Columbia Street, Springfield, Ohio

Send me complete information about your NEW LOW PRICE and Dealer Franchise.

NAME_____

FIRM_____

STREET_____

CITY_____ **ZONE**_____ **STATE**_____

Combustioneer **High and Low Pressure Oil Burners • Gas Burners • Coal-Gas-Oil Furnaces • Stokers • Humidifiers**
DIVISION THE STEEL PRODUCTS ENGINEERING COMPANY • SPRINGFIELD, OHIO

...Get the
SOOTMASTER
Filter Unit
with
THROW-AWAY
BAG!

• *Order from your jobber*

SOOTMASTER Filter Unit, with THROW-AWAY Bag, eliminates outside bag on your G. E. Cleaner, gives you double protection against leaks and blowouts Installed into your present cleaner in few minutes.

$17.75 Complete with 10 throw-away bags and quick-release tie-cord.

• *Write today for literature*
• *Jobbers' inquiries invited*

MASTER-CRAFT
SUPPLY CO., INC.
HAVERSTRAW, NEW YORK

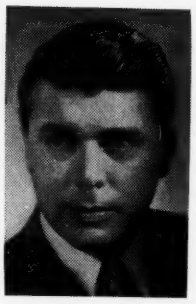
Originators and Manufacturers of THROW-AWAY FILTER BAGS for Commercial Vacuum Cleaners

manager of advertising and sales promotion, the post formerly held by Sullivan. Sullivan has been with Lau for the past four years and previous to that had been associated with the Hutzler Advertising Agency, which handles the Lau account. Martin had been with the Monsanto Chemical Company's Mound Laboratory as supervisor of graphic services.

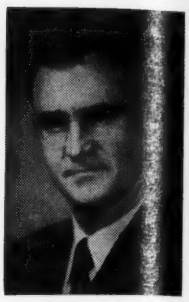
Donald F. Motz has become product manager, Williams Div., Eureka Williams Corp., Bloomington, Ill., to do liaison work between the sales and engineering departments. He also will head product application engineering for Williams Air-O-Matic residential airconditioning, Gas-O-Matic and Oil-O-Matic forced air heating units. Direction of the technical and application engineering education program for Williams employees and dealers also will be under his supervision.

Wesley J. Peoples, former president and chairman of the board of U. S. Radiator Corp., has been elected president of United States Air Conditioning Corp., Minneapolis, Minn. Peoples, who is also chairman of the Institute of Boiler and Radiator Manufacturers, was elected at a special meeting of the firm's board of directors and is reputed, with associates, to have become a substantial stockholder in the company. United States makes air conditioning, refrigeration, heating and ventilating equipment.

T. E. Carson has been promoted to the position of assistant sales manager in charge of Fluid Heat sales east of the Indiana and Ohio state lines and *R. T. Demarest* is to occupy a similar position in the states west of that boundary, according to an announcement made by Anchor Post Products, Inc., Baltimore, Md. Carson is to work out of Baltimore, Demarest from Red Oak, Ia. Both are expected to provide the closer field supervision that increased sales and customer acceptance has indicated was necessary. Better field contact and more help to the dealer organization is anticipated under this set-up.



Carson



Demarest

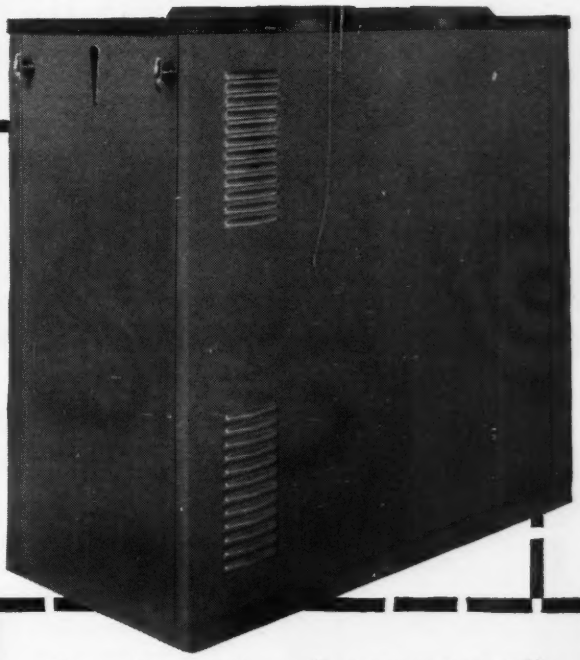
John A. Sandberg has been named to cover the states of Minnesota, Wisconsin, North and South Dakota and *David L. McDuffie* will operate in Florida and Georgia for the Wm. Steinen Mfg. Co., Accessories Div., Newark 5, N. J. These appointments bring to 12 the number of sales representatives covering 28 states for Steinen.

John Akins has been appointed direct factory representative for Sun-Ray Burner Mfg. Corp., Jamaica, N. Y. Akins will contact dealers in Kansas, Missouri, Nebraska and the western half of Iowa.

Howard B. Evans, who has been director of dealer development and sales training for Iron Fireman Corp., Cleveland 11, Ohio, in the North Atlantic states, has been transferred to Los Angeles. He has been with Iron Fireman since 1924, and in his new capacity will be responsible for expanding the dealer organization throughout California.

Arthur G. Kornitz, wholesale sales manager and educational director, Controls Div., Perfex Corp., died March 1 of a heart attack at his home in Milwaukee. Kornitz had been with Perfex for 10 years on the day of his death and had held the positions of district manager of Wisconsin and upper Michigan, Milwaukee branch office manager, Sales Order Department manager and office manager. Before coming to Perfex he had been assistant advertising manager for the Standard Oil Co. in Green Bay, Wis.

Kaustine FACTORY ASSEMBLY CUTS BUILDING COST



SAVES TIME...

Factory assembled, completely wired ready to install. It is only necessary to hook on the plenum, mount the burner and run the hot wire and fuel oil line.

SAVES MONEY...

Servicing is quick and simple with all controls on the front for one spot adjustment and a big service door makes the burner easily accessible.

The Kaustine "LOW BOY"

These fully automatic oil fired Low Boys are designed for cellar installation. There are three factory assembled models delivering 85,000 BTU's, 95,000 BTU's and 100,000 BTU's. Larger units up to 250,000 BTU's are shipped knocked down.

KAUSTINE QUALITY SERVICE SATISFACTION

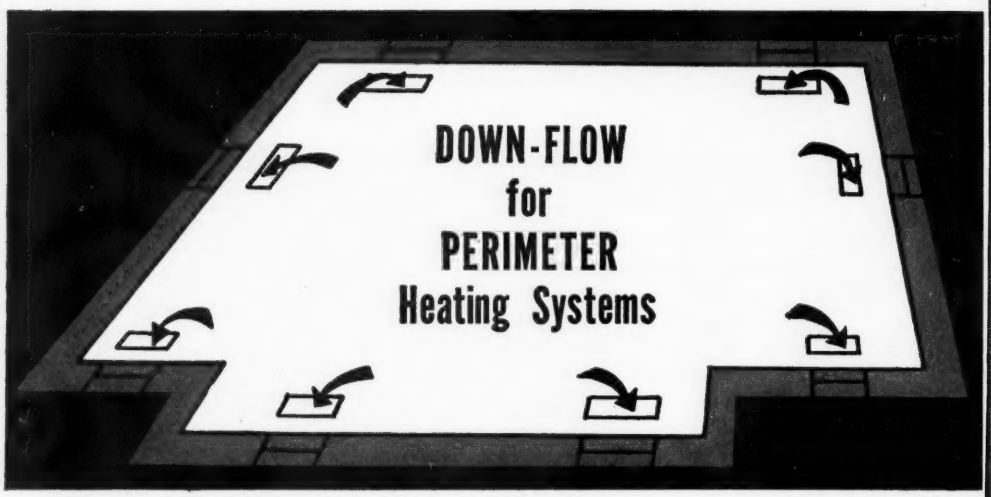
Kaustine
COMPANY, INC.
PERRY, NEW YORK

WRITE FOR FULL INFORMATION TO DEPT. F-4

There is a Kaustine Furnace or Winter Air Conditioner for every type of home.

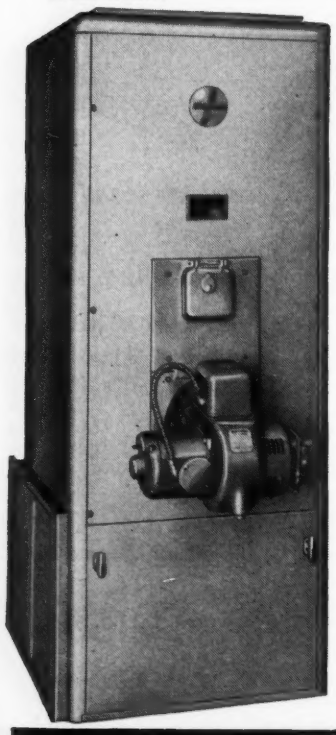
WINTER AIR CONDITIONING at its BEST!

Activated Heat WITH warm air NIAGARA FURNACES



GAS Model 40-80 DFAC DOWN-FLOW

OIL Model 30-90 DVAC HI-BOY



. . . and conventional "up-flow" Hi-Boys . . .

Long noted for dependable and efficient service—supplying maximum heat at minimum cost—Niagara furnaces are fast gaining fame also as maximum profit-makers for heating contractors.

The Niagara line, greatly enlarged to meet all modern residential heating requirements, now includes:

GAS { Basement and utility-room models . . . Down-Flow and conventional "up-flow" Hi-Boy units (steel) . . . also the famous Deluxe "Thrifty 50" with the exclusive, efficient Niagara cast-iron heat exchanger—forced air and gravity.

OIL { Down-Flow and conventional "up-flow" Hi-Boy models and basement-type forced-air and gravity units (steel).

COAL { Complete winter air conditioners and round and square gravity furnaces (cast-iron).

SIZES FOR LARGE, MEDIUM AND SMALL HOMES

For detailed information on the profit opportunity with Niagara, write:

NIAGARA FURNACE DIVISION
The Forest City Foundries Company
2500 West 27th St., Cleveland 13, Ohio

NIAGARA is the word for MAXIMUM HEAT at MINIMUM COST

Institute to meet in Chicago

The Program and Speakers who will appear at OHI's 31st Annual Convention, Apr. 20 to 22

THE PROGRAM for the 31st Annual Convention of the Oil-Heat Institute of America has been billed as "A galaxy of industry subjects and ideas galore for everybody in every branch of the industry." An examination of the agenda for the general sessions to be held April 20 to 22 at the Edgewater Beach Hotel, Chicago, will show that to be a good thumb-nail description of what's in store for the dealers, manufacturers, wholesalers, engineers and all other industry members who are planning to attend.

The arrangements committee has extended an invitation to everyone connected with the automatic oilheating industry to be present and the many hours they have devoted to securing speakers and lining up topics can't help but contribute helpful information. Cy Burg, Iron Fireman, heads the convention program committee and he has had able assistance from C. W. Lang, Sundstrand Machine; M. J. Donahue, Fluid Heat; E. F. Marquard, Allied Oil; Claude Potts, U. S. Machine; G. E. Hochstein, Heil Co.; C. S. Stackpole, Oil-O-Matic; R. H. L. Becker, managing director of the Institute.

The first day of the three-day meeting will be devoted to Institute business, commencing with the annual meetings of the Accessory Division and Distribution Division. The Commercial-Industrial Committee, Technical Division and Engineering Committee also meet during the morning of April 20, followed by the final meeting of the Old Board of Directors.

The Institute gathers for its important annual meeting after lunch, during which directors will be selected. They, in turn, will meet to select the officers for the coming year and to name the members of the Institute's Executive Committee.

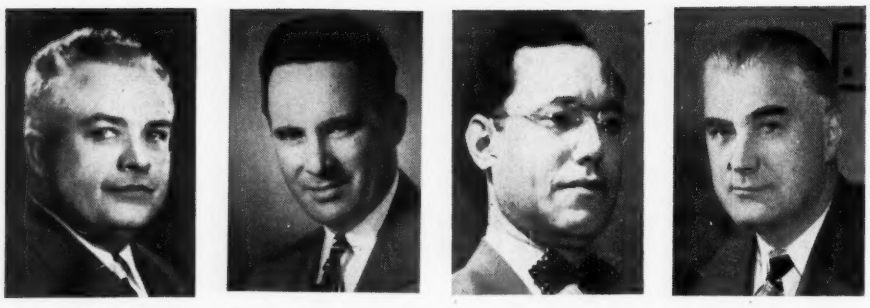
Some of the speakers *who will address general sessions on April 21 during the OHI's 31st Annual Convention. Left to right, top row: C. T. Burg, Iron Fireman; T. A. Crawford, Timken and president of the Institute; R. E. Moore, Bell & Gossett Co.; Frank Nunlist, Jr., Mueller. Bottom row: E. C. Webb, Iron Fireman; Robert Gray,* FUELOIL & OIL HEAT; *Robert Elmslie, OHI of Washington and William Schierholz, Sr., Fuel Oil Co. of St. Louis.*

There are to be no equipment exhibits in conjunction with the Convention this year, since the Oilheating Expositions were placed on a biennial basis during the past year. A show will take place next April in Philadelphia so that this Chicago Convention will represent the only opportunity to attend a national oilheating meeting, highlighted by the industry forums scheduled for April 21 and 22.

A brochure, distributed by the Institute on the Convention, explains: "There's no charge, no registration fee to attend the business sessions. They're free to members and non-members alike. Come and attend these industry forums; bring people from your own organization, too. Register at the Registration Desk in the lobby.

"This convention is for everyone in every segment of the industry—heating equipment and fueloil dealers, jobbers, wholesalers, distributors. And, it's for manufacturers of burners, boilers, furnaces, cooling systems, components and accessories used in installations in the smallest home or the largest commercial or industrial jobs. Architects, builders, contractors, engineers, Federal, State and Municipal people, building managers and others interested in automatic oilheating are most welcome."

The first of four sessions starts at 10:00 A.M., April 21, with an opening act to provide the keynote and set the pace for the Convention. "Where do we go from here?" is to be presented on this program to give a few recent



Four *of the industry men who have been assigned topics for the morning session on April 22. Left to right: Frank Sinning, Allied Oil Co.; Larry Sibley, Combustion Control Co.; Charles Burkhardt,* FUELOIL & OIL HEAT; *J. A. Collins, Frontier Oil Co.*

accomplishments of the industry, the present situation and the outlook for the rest of the year. The Engineering Committee is to sponsor "A look into future designs" to tell what has been happening in the design of oilfired residenital heating systems and to describe new methods of heat distribution which threaten to replace old methods used for both wet heat and warm air. "More power from manpower" will conclude the morning session, covering the need for recruiting, screening and training more salesmen and mechanics and ways of doing the job.

The names of speakers who are scheduled to participate in this and other sessions will be found in the complete listing of Convention events that accompanies this article.

Accessory Division Luncheon

The Accessory Division Luncheon next on the April 21 program is again going to be a bargain at $3.00 a person. Clark L. Hastings, Rochester Mfg. Co. and chairman of the Accessory Division, promises that a prominent, high caliber personality will speak and provide a look ahead for business and industry in relation to today's problems at home and abroad.

Residential cooling, fueloil and heating equipment profits are to be topics of the afternoon session on April 21. "Opportunities in residential air cooling" can be described as dealing not only with the opportunities, but with the equally important pitfalls that the dealer doing this work will encounter. Valuable tips will be presented as to what the dealer should know and do to make a success in cooling when combined with oilheating. Then "What the fueloil dealer needs for profits" has been programmed to discuss margins, storage, trends and management from the experience of oil jobbers, major suppliers and industry economists.

The final segment of this session is to be devoted to increased prices, lower operation and overhead costs, better management, increased sales volume, all adding up to "What are the best ways to more profits in the automatic oilheating business?"

Profits in Service

Continuing the pace of the previous day, the morning session on April 22 opens with further discussion of profits —"How they make a profit in service." Sponsored by the Technical Division, this part of the program presents the results of a revealing survey made to determine how to save on installation costs, but get good jobs; what is fair to the user and how to supervise installation and servicemen. Development of men for commercial-industrial sales, installation and service, which follows, is designed to relate the details of a manpower plan for this segment of the industry. As part of the topic of customer satisfaction an outline will be given the advantages to the buyer in getting a complete job and what dealers can do to help.

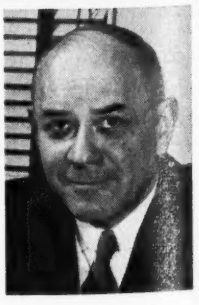
New homes, replacement sales and prospects blanket the major part of any dealer's merchandising program and "Sales" could well be an apt title for the afternoon session on April 22. "The new home market of tomorrow" will present an analytical look at the trend to small homes and compact, complete heating units and the problems they present. Selling "The ever-increasing replacement market" will be discussed in terms of how to make these sales, the opportunities present in modernization and how open end mortgages can be used to advantage in this respect.

"Prospecting for prospects," next on the program, is to review the different forms of advertising and promotion that a dealer can employ profitably and will introduce the Institute's newly-developed "Treasury of Advertising." Using users, telephone canvass and "cold canvass" also are to be included in this forum. A companion topic will be concerned with stimulating salesmen to make personal calls, specifically to build up burner sales in the Spring and Summer months and avoid the traditional Fall peak of installations and its accompanying problems.

And finally, what promises to be a really rewarding discourse will outline for the dealer the steps he can take, the viewpoint he needs to make more money and, believe it or not, have more fun in conducting his own business.

Informality is to be the keynote of all these sessions. No long-winded papers are going to be read and wherever possible technical language is to be avoided. The committee promises definitely that "there'll be action every minute to give everyone profit-building ideas to take home."

With an anticipated turnout of some 800 industry men it goes without saying that anyone who's planning



Top, *left to right: L. A. Casler, Eureka - Williams; Dave Wepman, York-Shipley and, bottom, L. T. White, Cities Service, who will appear on the program of the last general session, Wednesday afternoon, April 22 at 2:30 P.M.*

to be in Chicago for the Convention should arrange for his hotel accommodations without delay. Write the Reservations Manager at the Edgewater Beach Hotel, 5300 Sheridan Road, Chicago 40, Ill., tell him you are coming to the OHI Convention and request the type of room accommodations you desire for the dates you'll be in Chicago. In addition to the substantial block of rooms available at the Edgewater Beach Hotel, the Chicago Convention Bureau also has reserved 200 extra rooms at other nearby hotels.

Social Activities

No convention would be complete without the traditional social activities —and from all indications no one is going to be disappointed. Jim Owens, chairman of the Old Timers' Club, has completed plans for the Annual Jamboree at the Furniture Club. His message to Old Timers says simply, "Those of you who have attended past Jamborees at the Furniture Club know you can look forward to good food, a good show and the same hilarity of previous sessions held there." 'Nuf said. Reservations for members only, since this is the annual meeting of the Old Timers, can be secured by mail from Secretary H. A. Maccubbin, 120 West Madison St., Villa Park, Ill.

Mrs. J. W. Owens, chairman of the Ladies' Program, and her committee extends an invitation to the ladies, too. Plans for their entertainment already have been made and the activities promise to be new, unusual and different. All ladies coming to the Convention with their husbands should register on arrival and learn for themselves how Chicago hospitality outdoes the "Old South."

The ballroom of the Edgewater Beach Hotel has been reserved for the annual banquet and entertainment, which concludes the Convention on Wednesday evening, April 22. Five outstanding acts have been secured for the entertainment, augmented by an excellent master of ceremonies and orchestra. Jim Owens is chairman of the Banquet Committee.

All in all, the program for the 31st Annual Convention of the Institute almost certainly will offer a more informative collection of topical subjects, assigned to competent speakers who will talk from practical experience, than any previous gathering. You can learn an awful lot by attending, but you stand a good chance of missing an awful lot more if you pass up this opportunity. Make your plans now to be in Chicago on April 20, 21 and 22.

Program*

31ST ANNUAL CONVENTION

Oil-Heat Institute of America, Inc.

April 20 to 22, Edgewater Beach Hotel, Chicago

MONDAY, APRIL 20

8:30 A.M.—Market Research Committee Breakfast
9:00 A.M.—Retiring Distribution Division Board
10:00 A.M.—Annual Distribution Division Meeting
10:00 A.M.—Annual Accessory Division Meeting
10:00 A.M.—Engineering Committee
11:00 A.M.—Executive Committee
12:30 P.M.—Retiring OHI Board Luncheon (Open to all OHI members)
2:30 P.M.—Annual Meeting, OHI of America
3:45 P.M.—Commercial-Industrial Committee
3:45 P.M.—Technical Division
3:45 P.M.—New Distribution Division Board and Executive Committee
6:00 P.M.—Old Timers' Jamboree at Furniture Club

TUESDAY, APRIL 21

10:00 A.M.—General Session
"Where do we go from here?"
"A look into future designs"
"More power from manpower"
Speakers: C. T. Burg, Iron Fireman Mfg. Co.
T. A. Crawford, Timken Silent Automatic Div.
Ed Moore, Bell & Gossett Co.
Frank Nunlist, Jr., L. J. Mueller Furnace Co.
E. C. Webb, Iron Fireman Mfg. Co.
Claude Potts, U. S. Machine Div.
12:15 P.M.—Accessory Division Luncheon
Speaker: Nationally-Prominent personality—to be announced
2:30 P.M.—General Session
"Opportunities in residential air cooling"
"What the fueloil dealer needs for profits"
"What are the best ways to more profits in the automatic oilheating business?"
Speakers: S. J. Levine, General Electric Co., Home Heating and Cooling Dept.
K. T. Davis, Bryant Heater Div.
John Gilbreath, Servel, Inc.
J. F. Knoff, Airtemp Div.
Robert Elmslie, OHI of Washington
K. E. DeRosay, Sun Oil Co.
William Schierholz, Sr., Fuel Oil Co. of St. Louis
Robert Gray, FUELOIL & OIL HEAT

WEDNESDAY, APRIL 22

10:00 A.M.—General Session
"How they make a profit in service"
"How we develop men for commercial-industrial sales, installation and service"
"Don't sell the job short"
Speakers: Joseph Matachinskas, Brooklyn Cornell Utilities
J. A. Collins, Frontier Oil Co.
Gordon Bennett, Surburban Oil Co.
Charles H. Burkhardt, FUELOIL & OIL HEAT
Frank Sinning, Allied Oil Co.
Larry Sibley, Combustion Control Corp.
2:30 P.M.—General Session
"The new home market of tomorrow"
"The ever-increasing replacement market"
"Prospecting for prospects"
"How to stimulate salesmen to make personal calls"
"Take the initiative"
Speakers: Tom MacDonald, Minneapolis-Honeywell Regulator Co.
L. A. Casler, Eureka-Williams Corp.
Dave Wepman, York-Shipley, Inc.
L. T. White, Cities Service Oil Co.
6:00 P.M.—Get-together cocktail party
8:00 P.M.—Annual banquet-entertainment

* A few speakers were still to be secured at the time this compilation was made.

More Profits from present Customers*

You can afford price Brackets if you really work for big Tanks

FOR QUITE A FEW years I have been amazed that two different groups in the fueloil industry could hold opposite views on one of our most important questions. One group is obviously right and the other wrong, yet who could say for sure which is which?

A little under half of all fueloil marketers use a bracket pricing system. They give the customer with a large tank a lower price, usually a half cent lower. The other crowd, representing a few more than half of the marketers, don't believe in this . . . they don't think it pays.

Larger Tank earns Discount

We're not talking here about large commercial accounts, but rather the household that has either 275 gallons of storage capacity and pays the higher price for oil, or the one with 550 gallons or more and gets the discount.

The only way to settle an argument like this is to go digging. You can't prove the point through studying a single company or a dozen, so we covered lots of them. Some 300 fueloil men gave us their operating figures for 1952, and gave them to us in detail.

We get these figures primarily to use in our January issue. Most of you have seen it. It's a terrific job to take all the material the oilmen send, transfer it to work sheets and get it into tables and charts in about twenty days time. That means that there is always a lot of good material left in the work sheets unused. Later in the year we can dig out studies like this one.

We have made up a series of six charts to show you what we have learned about the effect on profits of differences in tank sizes. In order to know about these tank sizes, the reporting fueloil men told us approximately how many customers they had with each size of tank, so we were able to calculate an average tank figure for each company. After we got these all together we knew, for example, that about three-fourths of all tanks used for No. 2 oil were in the 275 gallon range and the other fourth were larger.

The average size for all customer tanks using this fuel is 394 gallons. Some companies had as low as 300 gallon average and some in the Pacific Northwest as high as 600 gallons.

On the first chart you can see what happens to the size of deliveries when the customers have larger tanks. It is not too good a showing. Notice that the dealers whose customers average 300 gallons storage capacity make a delivery of around 172 gallons. The dealer whose customers average 450 gallons in storage capacity makes an average drop of 250 gallons. He delivers just about the same per cent of the tank's capacity as did the first dealer. Certainly with an average tank capacity of 450 gallons it should be entirely possible to have average drops of 350 gallons.

One reason for not getting full advantage of the larger tanks is that so many dealers don't have enough of them and they also use a route system. When they are in a neighborhood serving some 275 gallon tanks, they stop and make a delivery to a larger tank even though it can't take much.

In most market situations this is definitely a bad practice. Naturally, it is the thing to do with fringe accounts where they are widely scattered, but in concentrated customer areas most marketers find that they do better by skipping the large tanks until they are ready to take a big drop.

All of this calls for a serious analysis of your own customer list. To make real profits out of fueloil distribution under today's margins, you have to put in enough time in study to really know what you're doing. It isn't enough to spend a lot of hours on the golf course and at the Elks Club or the church supper making friends so that they'll buy from you. Naturally, that is one of the best ways to build your customer list, but if you don't spend at least as much time in studying the detail of your own performance, you're not going to make money on these nice friends after you get them for customers.

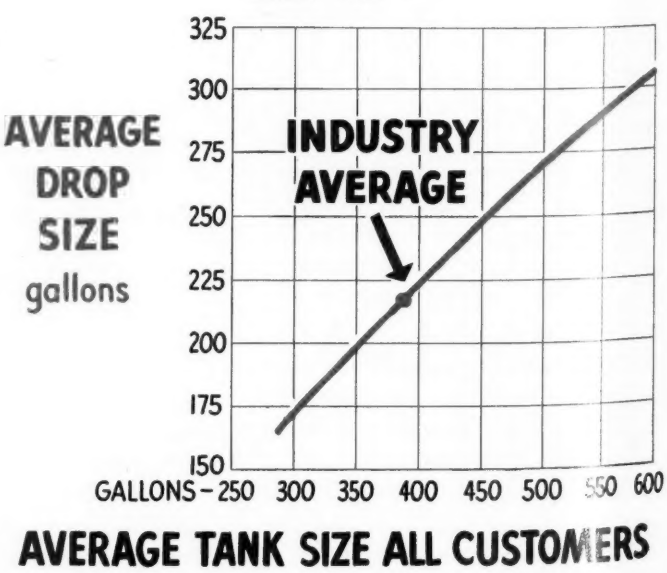
Driver's Wages a Factor

You will find as we go through these charts how very important it is to stimulate the use of large customer tanks, but at the start we can see that the industry in general is being very careless about making the most of the big tanks it has.

Now let's look at the second chart. Here we see one of the most significant yardsticks in the fueloil industry, that is the drivers' wage cost per gallon of oil delivered. Notice how sharply this drops for the dealer whose customers have the large tanks.

There is one weakness in this kind of chart and that is the fact that not

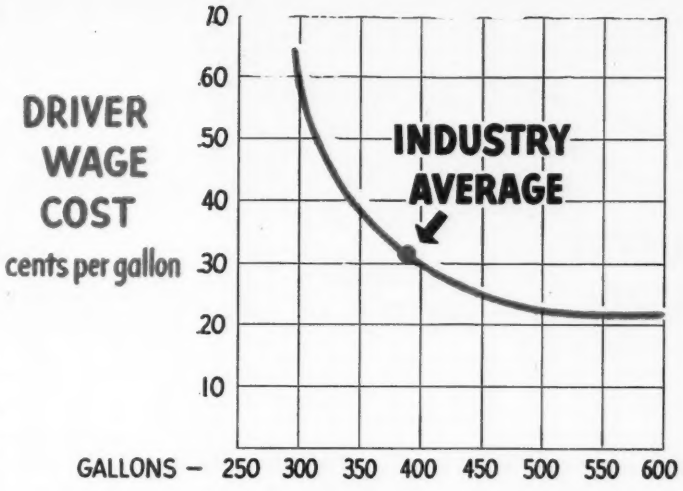
Chart No. 1



*This is a condensation of a talk by the editor to the annual meeting of the Wisconsin Petroleum Assn., February 25 at Milwaukee.

all of the oil men represented have the same wage scale for their drivers. In other words we are working here with some companies paying as low as $1 an hour for drivers and others as high as $2.20 an hour. That would be very serious if the study were based on only a dozen or so companies. It is not bad when we are dealing with 300 because with that number you get a fair balance all along the line.

Chart No. 2



AVERAGE TANK SIZE ALL CUSTOMERS

The median point is shown by the circle spotted on the curve. This shows that the average of all reporting companies with 394 gallon tank size find that their driver wage cost is .32¢ per gallon. We know from other parts of this study that the average driver wage rate for the whole group is $1.65 per hour. With that knowledge you can make a good comparison of your own figures against the group, by making an adjustment for your different wage rates.

If you are paying $2 an hour your cost should be about one-fourth more than the average of this group, which means that your driver wage cost per gallon would be .40¢ assuming that your average tank size is the same as this group or 394 gallons. You can slide up and down the curve from most any point and make that kind of a check on your own operation. Let's say for example that the average tank size of all of your customers is 340 gallons. Notice that this calls for a driver wage cost of .44¢ per gallon. If your hourly rate is $1.50 an hour that is about 93% of the $1.62 average on the chart so your wage cost per gallon would be 91% of .44¢ or it should be approximately .40¢.

It was not the principal intention of this study to give you measurements for checking the efficiency of your operation, but rather to show you why large tanks are better. At the same time these off-hand comparisons give you something to shoot at.

Now let's look at the third chart. This curve shows the total delivery cost per gallon for companies whose customers have the average tank sizes shown. Again you'll see that the total delivery cost drops sharply with larger tanks. The median point is .99¢ for a 394 gallon average tank and again based on a $1.65 per hour wage rate.

We're getting into some pretty significant figures here. Notice that if your customers have tanks on the average as small as 330 gallons for the whole lot your delivery cost would be as high as 1.25¢. Then if the average storage is as high as 470 gallons the cost is as low as .75¢. Here is your half cent differential. If we continued the curve to hit the individual 275 gallon tank and compare it to the individual 550 gallon tank the difference is definitely more than ½¢.

We see then that the half cent difference in price is more than justified assuming that your hourly wage rate is around the average figure used here of $1.65. The higher the wage rate above that, the greater saving you get from larger tanks.

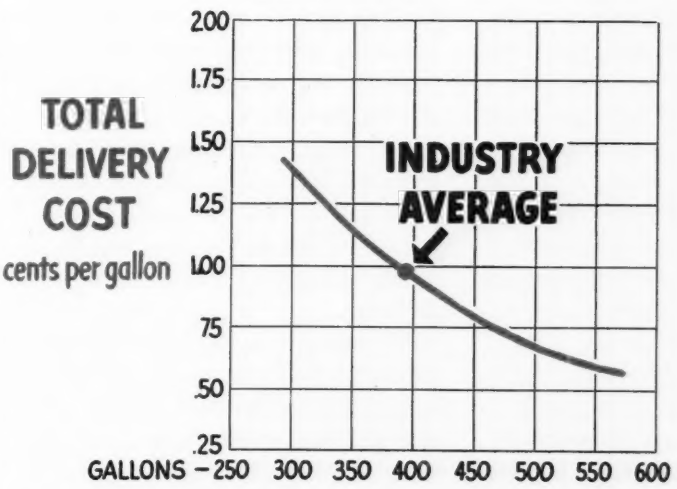
Again just as in Chart No. 2 you can make an adjustment by comparing your own hourly wage rate with the average used here of $1.65, and then you can tell from the curve about what your saving would be. For example if you have a $1.25 wage rate your costs should be just about three-fourths of those shown on the curve.

It is true that total delivery costs include many things other than drivers' wages but in a market where wage rates are low most of your other costs are correspondingly low and vice versa. Your insurance rates are lower in a small town, your garage charge is less for repair work, your office help earns less, and so on.

The next chart, No. 4, is probably the most useful of the lot because it has nothing to do with dollars and cents and we don't have to make any adjustment to fit the economics of your market. This shows the number of gallons delivered per hour compared to the average tank size. This is one of the most important measurements in the business.

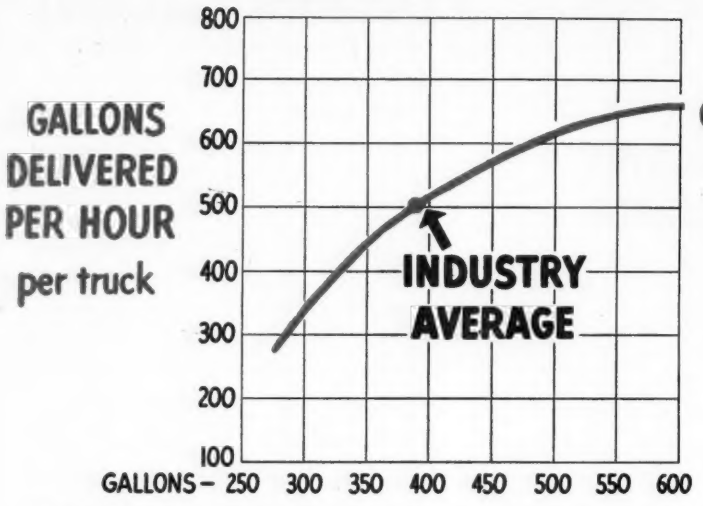
Notice that the median point with the 394 gallon over-all average is 508 gallons per hour. Where the marketers' customer tanks average as low as 300 gallons, he is only able to deliver 340 gallons per hour. That shows a great difference. Reducing the average tank size by roughly one-fourth reduces the gallons delivered per hour by one-third. Any fueloil

Chart No. 3



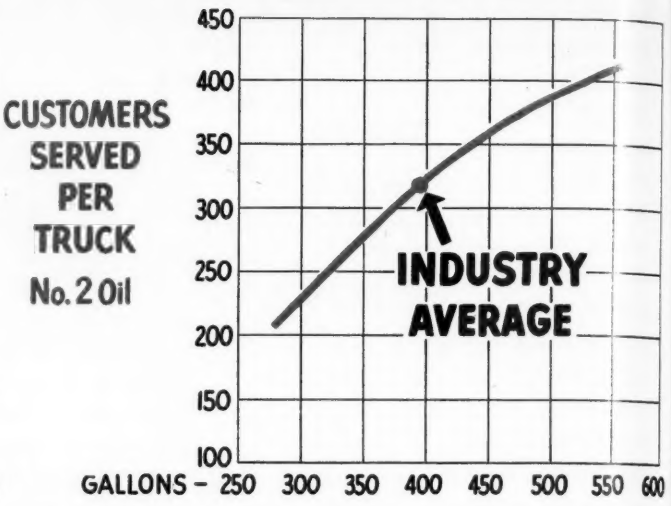
AVERAGE TANK SIZE ALL CUSTOMERS

Chart No. 4



AVERAGE TANK SIZE ALL CUSTOMERS

Chart No. 5



AVERAGE TANK SIZE ALL CUSTOMERS

man will recognize that regardless of what his driver wage rate might be, or all of his other costs, when he cuts the amount delivered per hour he is digging a lot deeper than petty cash.

The average here of 508 gallons per hour is a little over 4,000 gallons per day, while in the second instance with 340 gallons per hour he is only getting out 2700 gallons per day.

The fifth chart also brings a bit of a shock. How many trucks should you have for an annual fueloil business of say 2,000,000 gallons? The answers are all over the lot. Some companies serve as few as 150 customers per truck, some as high as 600. Market concentration has a lot to do with that and so does the size of the oil man's business. Sometimes they figure that however small their volume they need to have two trucks, one for emergencies, and feel that they can take the loss while they are growing up to fit the two trucks.

On the other hand when you put together this many companies those odd situations more or less wash out and you have a useful curve. Notice again the median point where all of the companies with their average of 394 gallon customer tank size have one truck to each 310 customers.

The companies with average tank size of 500 gallons have one truck to each 390 customers. At the other end of the scale the company with average tank size of only 300 gallons uses one truck for each 230 customers. Here again we're getting into real meat.

In the fueloil business trucks are always a major problem because of the seasonal peaks and valleys in sales. You often have to carry two or three extra trucks in the fleet to be used only six or eight weeks at the peak of the winter season. Anything that you can do to cut down your number of trucks will bless anybody's bank account with both hands.

When you stop to think of the hesitation over spending $5,000 to $10,000 for the next truck, each time you need it, and then your resigned feeling as you look at the bank account, shrug your shoulders and say OK, notice how much better it would be to temporarily defer that purchase by getting a group of your customers to put in bigger tanks.

This brings us to chart No. 6, with the very significant discovery that customers on their own rarely buy large tanks. It was a surprising coincidence to learn that the average tank size of all customers of marketers who offer a half-cent discount for large tanks was just the same as the average for those companies that use the same price right through. In each instance it was 394 gallons.

We know of a number of individual marketers who have made a real effort to get larger tanks and have been successful. On the other hand it is quite clear that simply having a pricing bracket system is no assurance that your customers will take it seriously.

There can be only one reason for this. Most fueloil marketers using bracket pricing have made no concerted effort to sell larger tanks. They are doing all right with their bracket systems, because we have seen that they more than save the half cent in the cost of delivery between the 275 gallon tank and the 550. But how nice it would be if along with this small improvement you could go on and get the big improvement that would come through a serious campaign to get larger tanks into the homes of all of your customers.

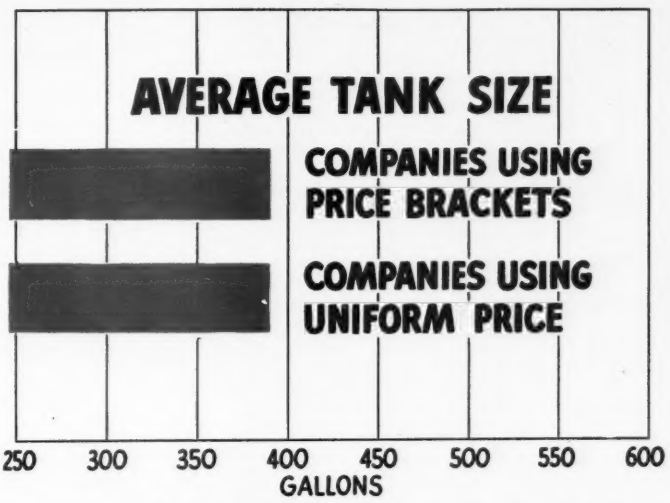
How can this be done? Some companies have been very successful through simply going after the sale of a larger tank the same way they would go out to sell anything else. They have written their customers a couple of letters and got a few of them in. They then have had their men in spare time go around and talk it over. This might be a very difficult undertaking were it not for the fact that the cost involved is so small.

Last year fueloil marketers throughout the nation sold a little over 70,000 extra tanks to increase the storage capacity of their customers. This is not very impressive because it represents only one per cent of all customers. The average price charged by all of those companies was $68 to put in an additional 275 gallon tank and hook it up in the basement with proper piping. The tank cost the dealer $38 on the average so he got an extra $30 for the

pipe and labor.

Some companies divide this charge into small payments without interest. One that I know of works it out by adding $5 to each monthly statement until the amount is cleared. However you do it, it can't hurt the customer much if you can make him believe it.

Chart No. 6



AVERAGE TANK SIZE ALL CUSTOMERS

How do you get the customer to buy this extra tank without scaring him on fueloil supply? Under no condition should you do that. Some marketers have been very short-sighted about this. They tell the customer that he needs the extra storage for his own security in case of severe winter storms. That is playing right into the hands of the gas industry.

We must never admit that there is the slightest possibility of any customer ever running out of oil. We tell them about our automatic delivery systems, our degree day operation, so that their oilheating will be carefree and they will never have to give a thought to the amount of oil in the tank. So definitely don't try to sell larger storage by threatening. There is a much better way.

Let the customer know that if he will put in this additional tank it will be helpful to you in the operation of your business. Most Americans want to be helpful if it doesn't hurt them too much. Then offer a ½¢ price differential to the customer with 550 gallons storage capacity.

We have seen from the chart that the customer will not do anything about that on his own initiative. Yet if the total cost is only around $68 and he can save $8 to $10 a year on his fuel bill he is certainly justified in making the investment. His return is just as sure as any investment could be and you are offering him at least a 12% annual dividend.

Curiously, most families if left alone will ignore or overlook an opportunity like this, but when you put forth some sales effort the thing makes sense to almost everyone.

Perhaps you agree with me up to this point. How are you going to get a price bracket system started? Bear in mind that I don't think you should do much to get your customer to put in larger storage at his expense unless you give him some cash inducement.

Naturally, I would not advocate cutting your present prices by a half cent on all existing customers with large tanks because that would simply be a straight out-of-pocket loss. You will have to work out an arangement to charge the customers with small tanks a little more so that you can offer the half cent to the big tank people. A good time to do this is when there's a general price change in your market.

You say that such an undertaking would be mighty difficult in your market. It can't be too tough when you notice that more than 40% of the companies in the country are using such a system and they had to start somewhere.

Sometimes the major companies make it easy for you. They did that on the West Coast. I believe it was five years ago last fall. In one movement they established bracket pricing for fueloil in five complete states. The independent marketers naturally followed them right away. In other areas the movement has been started by individuals.

In Westchester County, New York, for example, just three fueloil marketers started it. They were well established companies with good reputations, they raised their prices to 4/10¢ above the regular market postings and then they allowed a half cent off for people with large tanks. They not only lost no business, but with something new to sell they rapidly increased their businesses. Before long most of the other independents in that county followed their lead and then a short time later the major companies followed. Today the whole New York City area uses bracket pricing but it was started three or four years ago by just three companies who had the courage to step out and do something about improving their profits.

No two communities are alike. In your market you may have to use an entirely different approach. However, I believe that we have proven rather conclusively two things.

1. The saving in delivery cost with a large tank compared with a small one is enough in itself to more than justify a half cent price differential.

2. If marketers who have adopted price differentials would put forth more effort to get their customers to install an extra tank, they could increase their own operating profits quite materially through:

a. The operation of fewer trucks.

b. Lower total delivery costs.

❖

Dealers required to preserve burner service cost Records

PRICE CEILINGS affecting oilburner service were suspended on February 17, but it still is necessary that all records referring to such service be preserved. OPS General Overriding Regulation 14, Amendment 40—which removed the ceilings from service—says:

"However, any record relating to a service exempted from price control which you were required to have immediately prior to such exemption shall continue to be preserved and made available for examination by OPS or any other authorized agency of the United States, in the manner and for the period stipulated in the regulation requiring you to have such record."

Dry powdered *chemical extinguisher under test on a gasoline blaze.*

Retreat from Hazards

Underwriters Laboratories control the Safety of nearly a billion Items each Year

by
Robert Gray

THOMAS A. EDISON as every schoolboy knows was one of our great national heroes. Probably no other individuals among our top dozen have done more to advance American living standards. He lived to see many of the fruits of his inventions and to be highly honored time and again. But among these honors there was one particular day that brought to him the greatest accolade of his career. That was in the year 1893 when for the first time hundreds of thousands of electric lights were turned on to open the Chicago World's Fair, officially known as the Columbian Exposition.

It's difficult today, only 60 years later, for us to get the full impact of that exposition. There have been others before and since but none brought such a thrill as that first showing of massed electric lighting to a world accustomed to the dim illumination of kerosene lamps and gas flares. To the amazed spectators it was almost as though the Creator had left a door ajar.

But just like the first Eden this one too had its snake, soon to be discovered . . . fire. Back East the big insurance companies were first mildly concerned and then seriously worried. Recognizing that they were on the threshold of the coming electrical era, their first experience with the fire hazard had them jittery. For the Columbian Exposition was experiencing a dozen or more electrical fires a day.

Mr. Edison's lamp in its socket was doing nicely but the facilities that brought the current to that lamp lacked considerable in dependability. For example, the very wire was crudely formed compared to today's standards. The copper strand was not uniform in thickness. Under heavy loading the thinnest spots would heat and break, then the current would arc across the gap, melt the crude insulation and start a blaze. Switches, panel boards, terminals, everything was crude through lack of experience.

On the exposition grounds was, of course, a fire station. In an upstairs room of this station the insurance companies planted one William Henry Merrill, a young engineer, whose assignment was to gallop to each blaze along with the fire engines and to try and learn on the spot what had caused it. With so many each day they began to fall into a pattern and Merrill's hours soon filled with writing reports back to the head office of the National Board of Fire Underwriters.

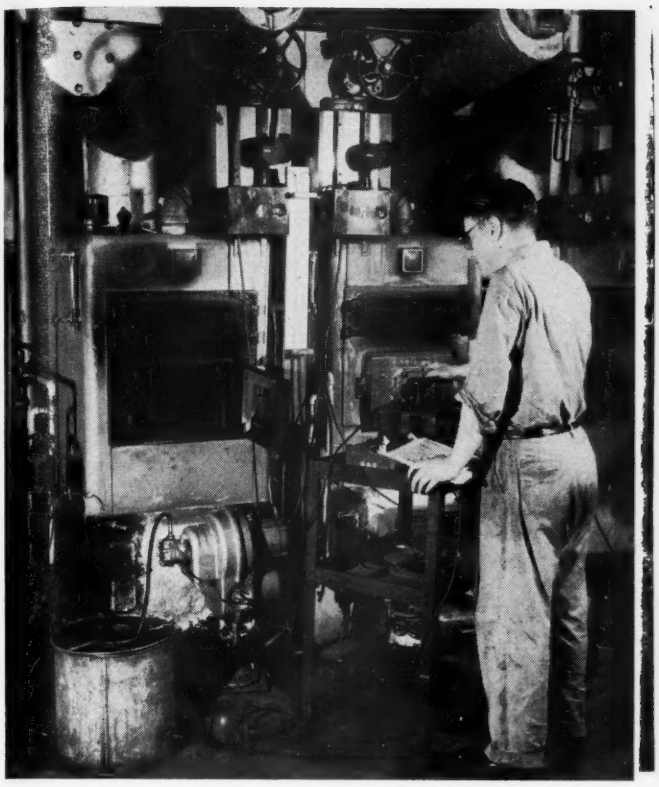
He made recommendations which were in turn transmitted to the manufacturers of the offending items. The insurance companies outlined to the exposition management and the exhibitors certain improvements that they should make. For while the policies were firmly in force and losses under them would be paid, nonetheless no honest person ever wants a fire because he loses far more than his insurance can ever compensate. There was always the threat that a big fire would put the whole show out of business.

Merrill's tireless energy and little sleep eventually brought rewards; the number of fires diminished and nearly stopped altogether. He well deserves the credit of a distinguished pioneer for the first big effort to make electricity safe.

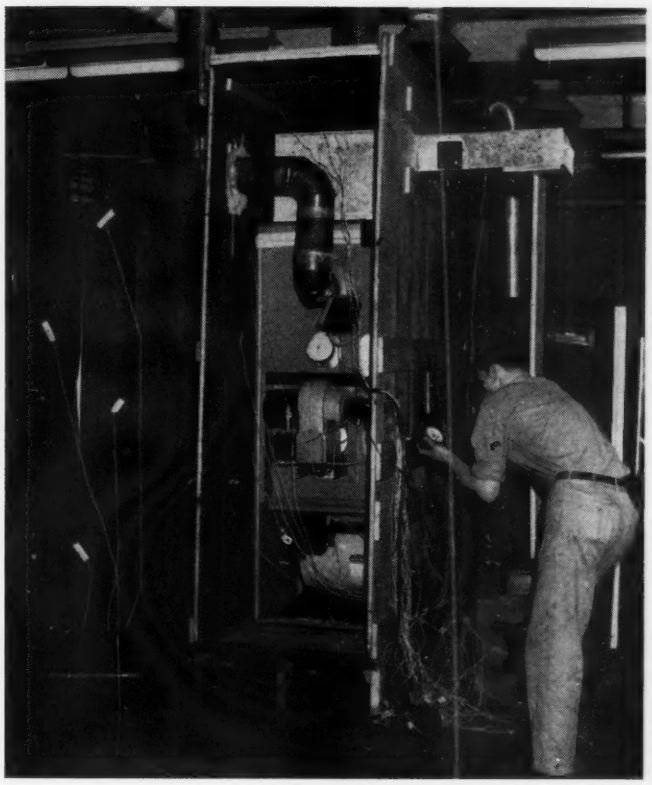
At the close of the Fair the National Board sat around a table and decided that Merrill's work had been so fruitful that it should be perpetuated. So they asked him to establish and be the first president of Underwriters Laboratories. Supported entirely by the insurance companies until 1917, it was then incorporated under a non-profit charter and became self-sustaining by getting the manufacturers of the products tested and listed to pay the costs. By that date the laboratory had gained such stature that many municipalities and some states were requiring by law that numerous items carry the UL label to be salable in their jurisdictions.

Scope has enlarged

Through the years since then the work has grown to embrace literally thousands of products. In the aggregate nearly a billion units of these products were sold last year. The main laboratory in Chicago has 365 employees and 225 of these are graduate engineers. There are smaller specialized labs at New York and San Francisco in addition to 300 field engineers



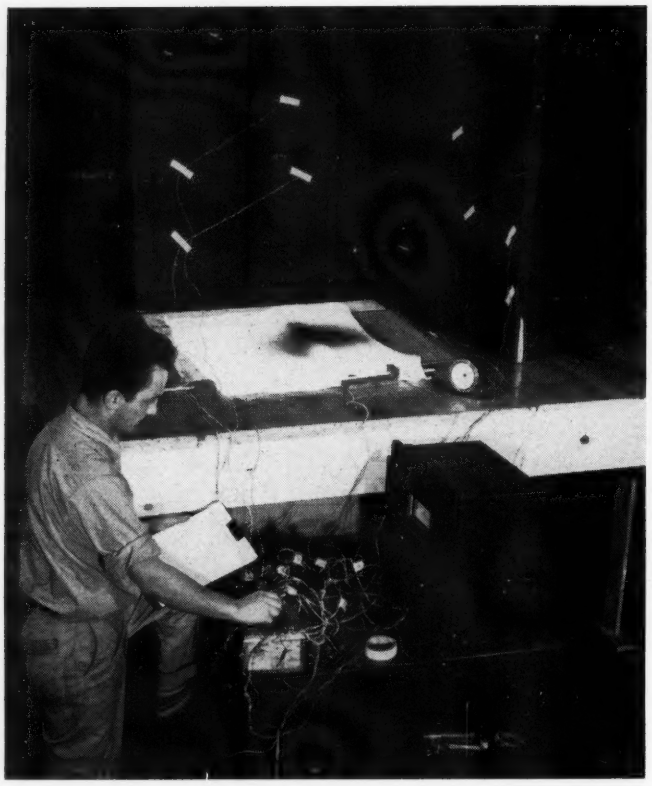
Conversion oilburners *of every manufacturer undergo prolonged testing and sometimes several revisions before they can carry the Underwriters label. The basic test is 500 hours running with 10 minute on and off cycles.*



Furnace-burner unit *for closet installation is under test to determine the fire safety of the adjacent walls. Notice the thermocouples for noting temperatures on all walls and ceiling. Too much heat loss brings a rejection.*

Electrical safety *test for irons includes 500 hours running with four drops to the floor. Toasters, washers, refrigerators and other electrical home appliances rate the benevolent protection of Underwriters' engineers.*

Pair of fire doors, *though somewhat bowed, have weathered the inferno of 100 gas flares and 2000° temperature on the back side while a cold stream from a fire hose maintained a strong pressure on the front.*



Oilfired floor furnace *being tested for temperature safety of surrounding walls. Then a cloth is dropped over the grille. If it ignites the manufacturer is in trouble. Very few products are approved on the first testing.*

An engineer *measures the force required to tip a space heater, equipped with a vaporizing pot-type oilburner. The tipping force in pounds multiplied by the tipping angle in degrees shall not be a smaller number than 150.*

whose job is to visit factories and check the items in production runs to be sure that they conform to the original test samples.

Oilheating and fueloil men have been concerned with Underwriters almost from the start. As a coincidence the Chicago World's Fair of 1893 first saw the use of oilburners on any appreciable scale . . . in any event that's where they first received notice. The main buildings were heated with large oilburners fired with a high gravity crude oil.

When domestic burners came with the early 1920's we were into Underwriters all the way, for we not only had to have clearance on the electrical apparatus involved but we also needed fire-safety in the handling of a flammable liquid. Virtually every oilheating product today, from electrodes and transformers to controls of every description, the burner itself and often the boiler or furnace unit that houses it . . . even the oil tanks . . . must carry the lab's listing or labels.

Our industry has paid in fees and label services many millions of dollars toward the support of Underwriters while they in turn have greatly assisted in our development of public acceptance for oilheating through removal of the early day hazards. Last year we paid them over a half million dollars but that becomes trivial in the light of our billion dollar sales of oilburning equipment and our one and a half billion dollar sales of fueloil.

Whenever possible both the laboratory and the industry work from standards. There may be a time lag under which an existing standard becomes obsolete before new ones are developed. At present Herbert Witte, who heads the combustion division of the laboratory, is spending almost his full time in developing improved standards for oilburning.

When a standard is first drawn up it is sent to the members of the industry advisory committee. After their comments are noted and perhaps incorporated into a revision, a tentative standard goes to all known manufacturers of the product and to the fire council. Further revisions may prolong the activity for some months and then the final standard is printed and distributed.

Such a standard sets forth not only the limitations and safety requirements but also the test procedure to be used. Thus a manufacturer can make his own tests at his plant and if he follows the manual carefully he will know pretty well in advance what reaction the new product will get at the lab. Not all of these standards with test procedures delineated are yet in use but they are in the works being developed.

Most conversion oilburners today get not only the UL label for fire and casualty safety but also carry the Commercial Standard label which designates a certain quality of performance standard. This was worked out before the last war under the aegis of the National Bureau of Standards and then turned over to Underwriters for testing and labeling.

As a rule it takes from seven to nine months to get an oilburning item through Underwriters Laboratory. It doesn't take nearly that long to run the actual tests but the fact is that our industry has outgrown the facilities of the lab to handle us with dispatch. There is a constant backlog of around

400 new products or revisions of old ones to be passed through the routine. The oilburning facilities are quite large but even so the engineers can only handle three or four dozen projects at one time. So most of the delay that the manufacturers complain about is the waiting time to get going.

During the past year the number of graduate engineers in the oilburner section has been increased from 18 to 35. Not all of the new men understand our industry well enough yet to move as fast as the old ones but they are in the indoctrination process and are becoming very helpful.

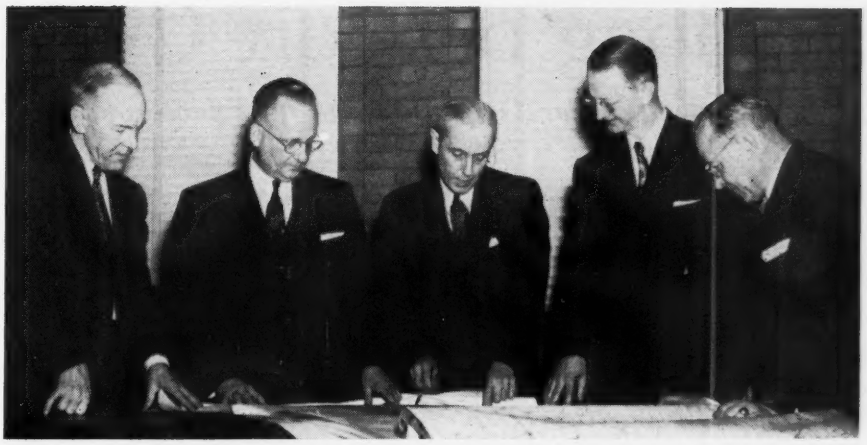
But the really significant factor in our promise of faster service just around the corner is the big new project out at Northbrook, 25 miles Northwest of the Loop. It's a 153 acre tract recently bought and to be in use by next October. Among the several buildings on the tract is one with 13,000 sq. ft. of floor space that is to become the oilheating lab. This is two and a half times the floor space now devoted to oilheating.

This new country layout was originally a brick plant and it has a deep clay pit covering 30 acres that will be ideal for the numerous kinds of explosion tests that the engineers have to conduct.

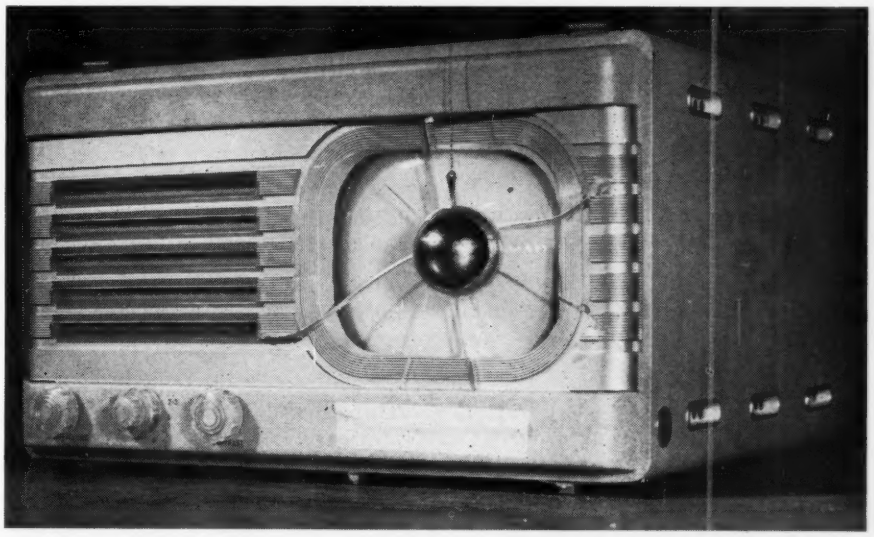
In addition to conversion burners the lab also tests boiler-burner and furnace-burner units. To start, the boilers must have A.S.M.E. code labels or the lab won't handle them. The principal testing on both boiler and furnace units is for fire safety since they are often installed in closets or other tight quarters and their insulation must protect the surrounding walls.

A burner manufacturer pays for his tests just what they cost the lab. An upset price is usually agreed on in advance, somewhere around $700-$800, and it can't cost more than that. But if everything slips right through without a lot of revisions, the manufacturer will probably get a refund at the close of the year. There is also some income for the lab from the label service. Last year more than a million were supplied for oilburners. Some of course are duplicated where there is one on both a boiler and its burner . . . they cost 25¢.

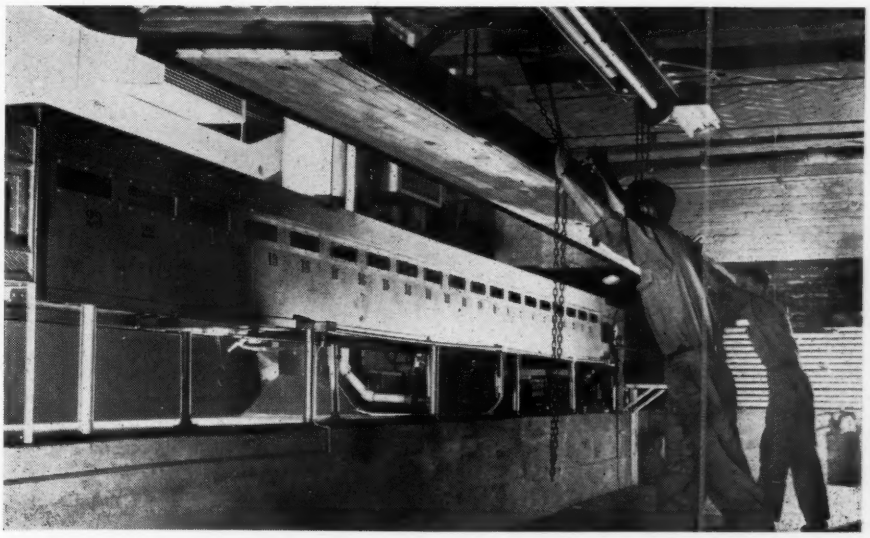
(*Please turn to page* 197)



Key men *at Underwriters Laboratories study a plot plan of the new expansion development under construction at Northbrook, 25 miles from the center of Chicago. From the left, Bow Breed, supervisor of oilburner testing, Curtis Welborn, president, W. S. Austin, secretary, Herbert Witte, director of the Combustion Div., and Norman Davis, director of public relations.*



Suspended steel ball *attacks the safety glass shield on a television instrument. Most states require this shield. A television picture tube is under such high vacuum that a break will throw inch thick glass pieces 100 ft.*



Building materials *are tested against this horizontal furnace. In this instance, the boards in the frame have been impregnated with a fire resistant chemical. Roofing materials needing Underwriters labels are tested here.*

Are long or short Cycles better?

Intermittent oilburner Operation and its Effect on over-all Efficiency

by
L. H. Ventres*
and
H. R. Heiple*

IN THE ARTICLE by the authors titled "Testing Boilers Automatically" which appeared in the October, 1952 issue of FUELOIL & OIL HEAT, a description was given of an automatic condensate measuring apparatus developed in Shell Oil Company's fuel-oil and oilburner testing laboratory at Sewaren, New Jersey, which made it possible to accurately determine domestic heating boiler efficiencies regardless of whether the boiler is being fired continuously or intermittently. By means of this apparatus it has become feasible to explore factors influencing the performance of oil burner-boiler combinations which heretofore have remained obscure due to the difficulty of obtaining reliable test data under conditions of intermittent operation which prevail in the field. Without such information it has been difficult to provide answers to many questions of a very practical nature.

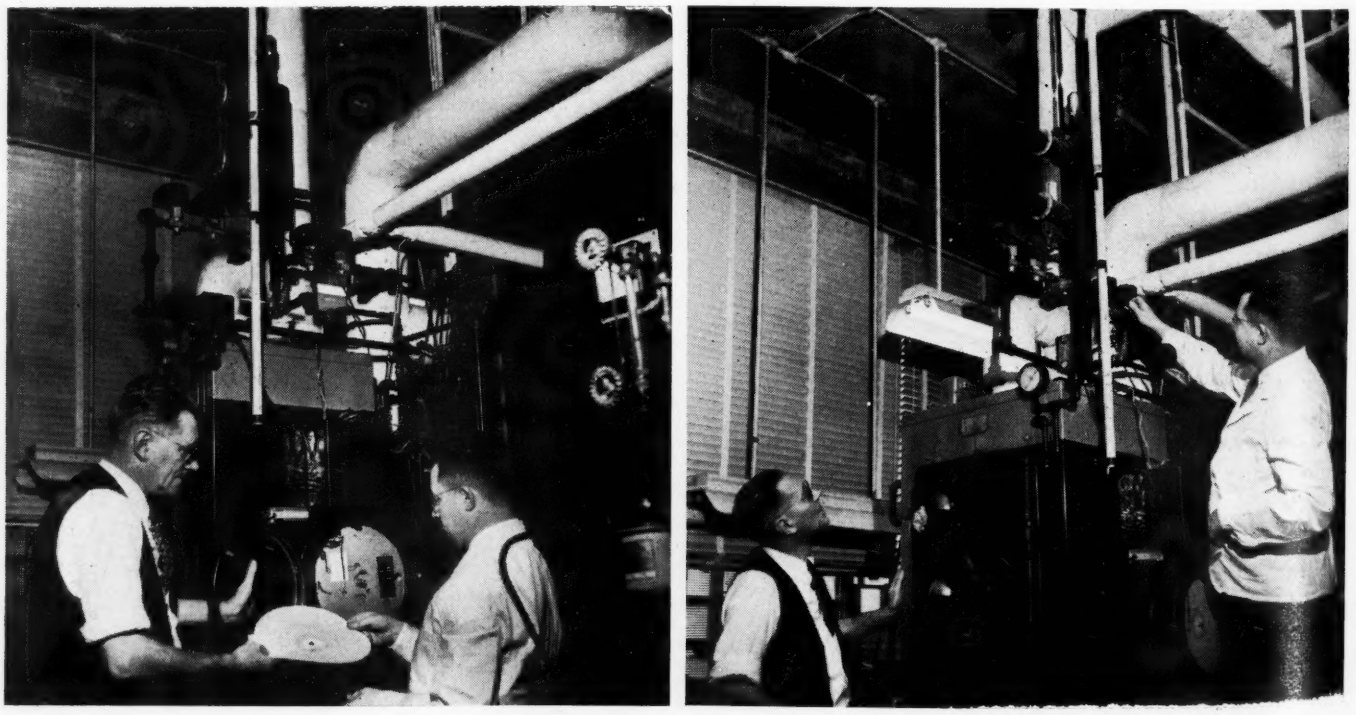
For example, the builder of steam heating boilers is interested in knowing how the performance curves of his boilers compare under intermittent operating conditions with those of his competitors. A builder will inquire as to the best method of selecting a boiler or furnace for the home he is erecting. An oilburner service man will want to know the optimum firing rate for a given boiler-burner installation. A home-owner, upon learning that a considerable fraction of the total heat liberated from the fuel enters his living quarters via the basement, will be concerned as to how he can reduce the loss of this heat to a minimum.

Other questions for which we have no satisfactory answers on the basis of presently published data are: (1) What is the effect of underfiring or over-firing on overall home heating efficiency? (2) Which type of system —steam, hot water or warm air—is most affected by intermittent operation? (3) Can the effect of burner adjustments or improvements in existing installations be predicted on basis of tests made when the burner is operating continuously?

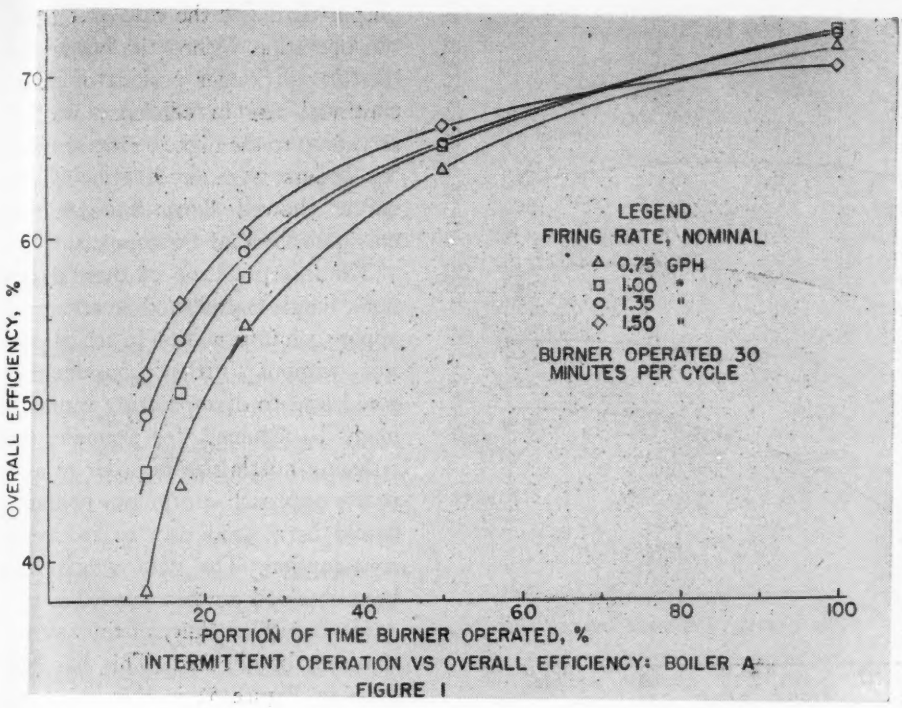
The automatic condensate measuring apparatus has been used to excellent advantage in an investigation which was started in the Shell laboratory about three years ago to obtain test data which might provide clues to the correct answers to these and to a host of other related questions which have arisen as the studies have progressed. The purpose of this paper is to summarize that portion of the test data which are concerned primarily with the effect of firing rate and burner cycling on the overall efficiency of oil-fired steam boilers operating intermittently.

It should be noted at the very outset that these data do not necessarily apply to hot water boilers and warm air furnace installations. Although tests were conducted on a total of four different boiler-burner combinations, for the sake of clarity and brevity typical data obtained on only two of the four boilers are presented here.

*Products Application Laboratory, Shell Oil Co., Sewaren, N. J.



L. H. Ventres, *left, and H. R. Heiple are shown in the midst of some of the many tests conducted at Shell Oil Company's Sewaren, N. J. Products Application Laboratory to determine the effect of intermittent oilburner operation on over-all efficiency.*



INTERMITTENT OPERATION VS OVERALL EFFICIENCY: BOILER A

FIGURE 1

The data for all four boilers are, however, in close agreement.

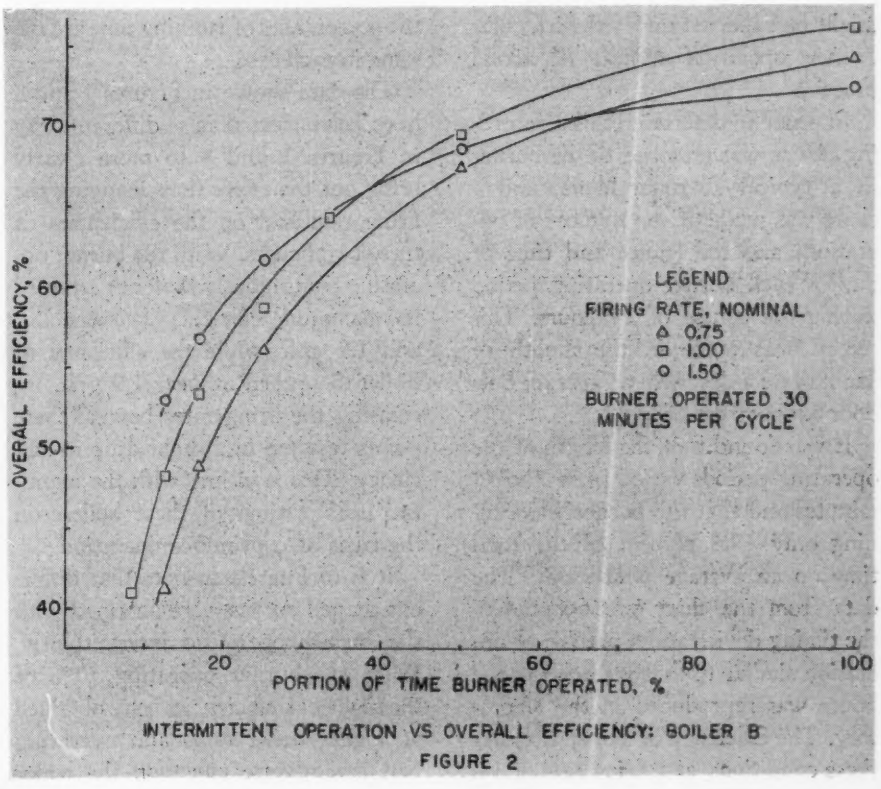
All data presented in Figures 1 to 7 are based on actual evaporative efficiency tests in which the oil burned was weighed according to standard procedures and the amount of water evaporated was measured by means of the automatic condensate measuring apparatus described in the reference given above. All tests were made under closely controlled laboratory conditions designed to simulate, in so far as possible, practical field operation. Although it is realized that many boilers in actual use may be quite dirty and in many cases the CO_2 of the flue gases may be relatively low, in order to obtain valid comparisons in this series of tests the heating surfaces of the boiler were kept free of soot and scale and the CO_2 was maintained at 12.0 ± 0.1% with a zero Shell-Bacharach smoke rating.

One of the boilers (Boiler A) selected for the tests was a modern cast-iron coal-burning (conversion) model having an I.B.R. rating of 400 sq. ft. of steam radiation. The other (Boiler B) was a cast-iron oil-burning boiler rated at 290 sq. ft. of radiation. Both were made by the same manufacturer and are considered representative of boilers commonly used to heat five or six room houses. The other two boilers for which the data are not given were an obsolete cast iron coal-burning boiler and a modern steel tubular boiler designed for oilburning. In all of the tests the boilers were fired with gun-type high pressure burners equipped with Shell-designed combustion heads using No. 2 fueloil.

Typical efficiency data obtained with Boiler A at different firing rates with the burner operating continuously and on various intermittent firing cycles are shown in Figure 1. In each of the intermittent tests the burner operating period was 30 minutes and the percentage of the time the burner operated in each cycle was varied by changing the length of the "off" period. The 30-minute firing period was selected primarily because it permitted the burner to run long enough for the system to approach an equilibrium condition. Comparable performance curves for Boiler B are shown in Figure 2.

It will be noted that in the case of each boiler the highest efficiencies were obtained with the burner operating 100% of the time, i.e., continuously. A relatively slight drop in efficiency occurred with the burner operating 50% of the time (30 minutes on and 30 minutes off). The drop in efficiency was much more pronounced when the operating time was reduced from 50 to 25% (30 minutes on and 90 minutes off) and with the burner operating only 12½% of time (30 minutes on and 210 minutes or 3½ hours off) the rate of decrease was even greater. In this case Boiler A, operating at a firing rate of 0.75 gallons of oil per hour, delivered only about half the quantity of steam per pound of oil burned as it did when the burner was running continuously at the same firing rate.

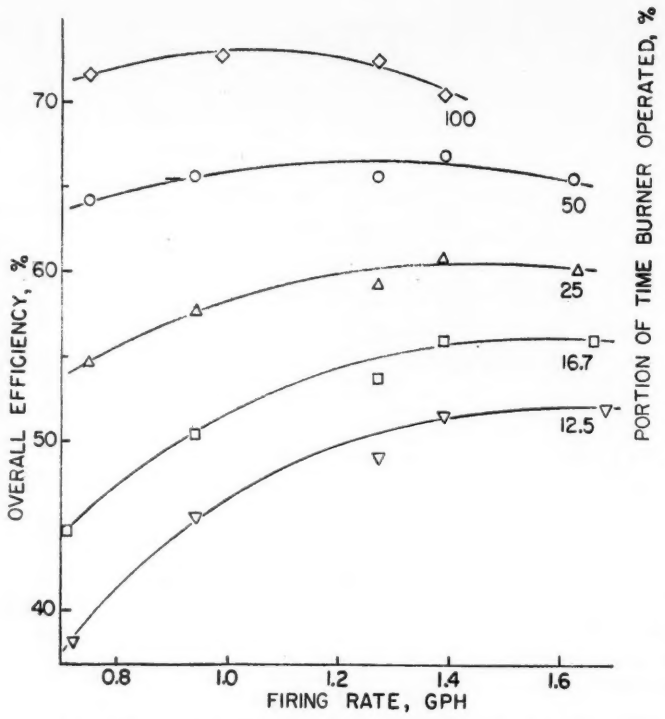
It is realized that regular "on and off" cycles such as those maintained in



INTERMITTENT OPERATION VS OVERALL EFFICIENCY: BOILER B

FIGURE 2

these series of efficiency tests are rarely obtained in actual service, and then only for short periods, due to circumstances which are continually changing the heat requirements. If, for example, the doors and windows of a home remained closed for several hours at a stretch and the outside temperature and wind velocity also remained constant during this time, then a burner could conceivably establish a firing cycle which would be repeated over and over. But the opening of a door or window, the lighting of the oven in the kitchen, or a cloud passing over the sun is all that it takes to produce irregularities in the burner operating cycle. Thus the question arose as to whether test data obtained under regular cycling conditions could be relied upon to predict efficiencies that might be expected under the irregular burner operation typical of actual practice.



OVERALL EFFICIENCY WITH INTERMITTENT OPERATION
EFFECT OF FIRING RATE: BOILER A

FIGURE 3

In order to determine this a recording device was attached to the burner in a typical six-room home, and a chart was made of the number of operations and the length and time of day of each burner operating period during the course of 24 hours. This record was made in the month of January on a day with an average outdoor temperature of 35°F.

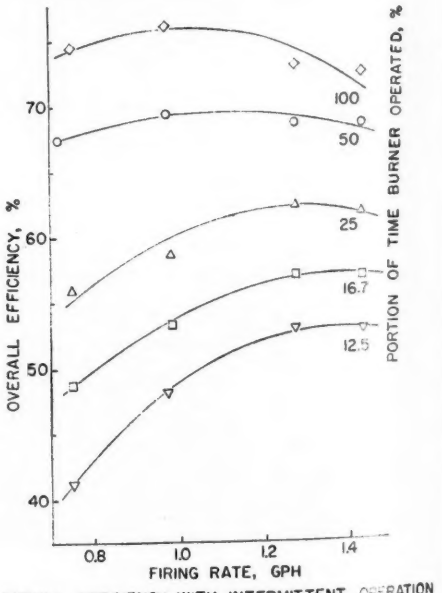
It was found that the length of the operating periods varied from 7 to 55 minutes and that the burner was running only 19.8 percent of the total time on an average winter day. The data from the chart was adapted to the timing device and a pattern of operation similar to that recorded in the house was reproduced in the laboratory. The efficiency of Boiler B under these conditions, at a firing rate of 1.0 gph, was found to be 57.1%. By referring to Figure 2 it will be seen that the efficiency of this boiler operating at 1.0 gph on a regular firing cycle 19.8 percent of the time was 56.4%. Thus it would appear that the efficiencies measured in the laboratory with regular cycles and those encountered in the field are comparable, provided the percentages of running time are the same in each case.

The data shown in Figures 1 and 2 have been plotted in a different way in Figures 3 and 4 to more clearly bring out the effect that changing the firing rate had on the efficiencies of these two boilers. With the burner operating continuously Boiler A attained its maximum efficiency between 1.0 and 1.2 gph, while the efficiency of Boiler B peaked at near 1.0 gph. increasing the firing rates beyond these points resulted in a slight drop in efficiency. This is in line with the manufacturers' ratings of these boilers on the basis of continuous operation.

It is of interest to note that different shaped curves were obtained with the burner operating intermittently. With the burner operating 50% of the time peak efficiencies were obtained at higher firing rates and overfiring had less adverse effect on the boiler output than was the case of continuous operation. When the burner was off for still longer periods of time a continual rise in efficiency was observed up to the highest rates at which the boilers were fired, although the curves showed signs of reaching a maximum beyond these points.

The interpretation of these data is not a simple matter, and an attempt to apply such information in actual practice without further considerations could lead to disappointing results. It might be assumed, for example, that reducing nozzle size in order to more nearly approach continuous operation would be a good way to reduce oil consumption. The data which have been obtained can be analyzed in such a way that the validity of this assumption can be checked. This has been done in Figure 5; in this graph the solid lines show the efficiency as a function of firing rate for various percentages of operating times (these curves are derived from Figure 1) and the dashed lines are calculated lines of constant heat output.

The use of these curves may be demonstrated as follows. Consider an installation in which the burner is fitted with a nozzle which delivers 1.60 gph and weather conditions are such that the burner operates ten percent of the time (point A on Figure 5). The dashed curve through this point has a maximum value at a firing rate of about 1.3 gph, corresponding to an operating time of about twelve per-



OVERALL EFFICIENCY WITH INTERMITTENT OPERATION
EFFECT OF FIRING RATE: BOILER B

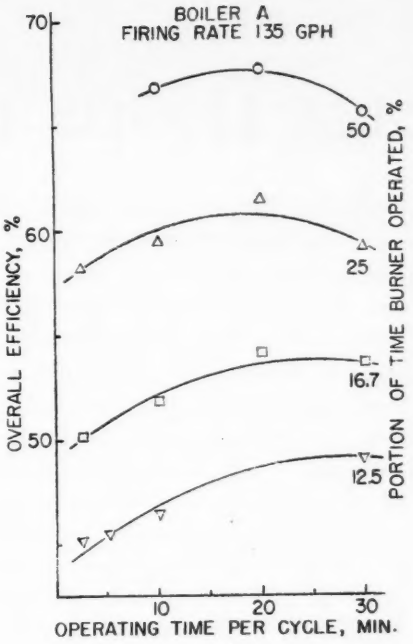
FIGURE 4

cent. The gain in overall efficiency, represented by the space between the arrows, in only 0.9%. A further reduction in firing rate results in a decrease in the overall efficiency in spite of the fact that the operating time is increased, but no loss in efficiency occurs (as compared with the efficiency at a firing rate of 1.60 gph) until the firing rate becomes less than 0.94 gph.

If, however, the weather conditions require operation of the burner for twenty-five percent of the time (point B on Figure 5), the substantial increase in overall efficiency of approximately 3.5% can be attained by reducing the firing rate to 0.75 gph and operating fifty percent of the time. In this particular case a reduction in firing rate below one gph would be inadvisable, however, in view of the loss in efficiency at low operating time at low firing rates.

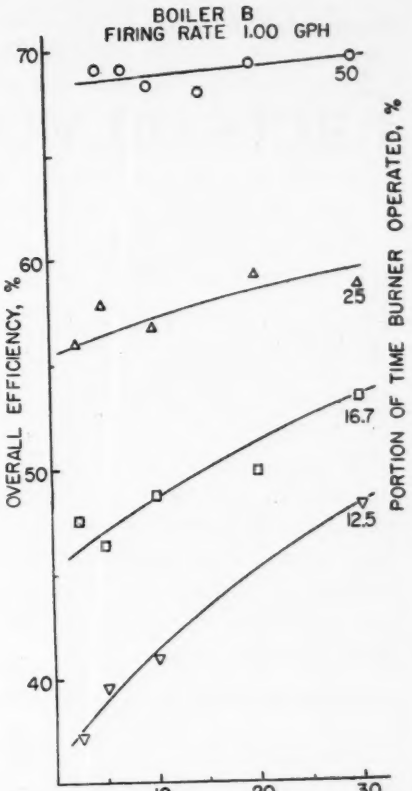
The gain in efficiency obtained by reducing the firing rate may be partially offset by loss of pickup, and possibly a loss in combustion efficiency, since most burners cannot maintain as high a CO_2 with small nozzles as with larger ones. When the size of the nozzle is reduced the burner operates for a greater percentage of the time with a tendency thereby to attain higher efficiency. On the other hand, the adverse affect of underfiring enters the picture and tends to offset the more favorable operating time. The consequence of the interaction of these two influences, therefore, is that the improvements are less than may have been originally anticipated at first glance.

The uniform and comfortable room temperatures provided by the up-to-date oilburner heating system today, in contrast to the "cold 70's" which typified the average oilheated home ten or fifteen years ago, has been accomplished largely through the use of improved and more sensitive room thermostats. This has resulted in shorter and more frequent burner operating periods. The question has been raised regarding the effect the length of burner operating time per cycle on over-all efficiency. In addition to the work described above, in which the burner operating period was maintained at 30 minutes per cycle, a brief study was made to determine the effect on efficiency of changing the length of the operating period per cycle. In these tests the firing rate was held constant but the burner running time was varied stepwise from 2½ up to 30 minutes. The ratio of "time on" to "time off" was also varied. The data obtained are presented in Figures 6 and 7.



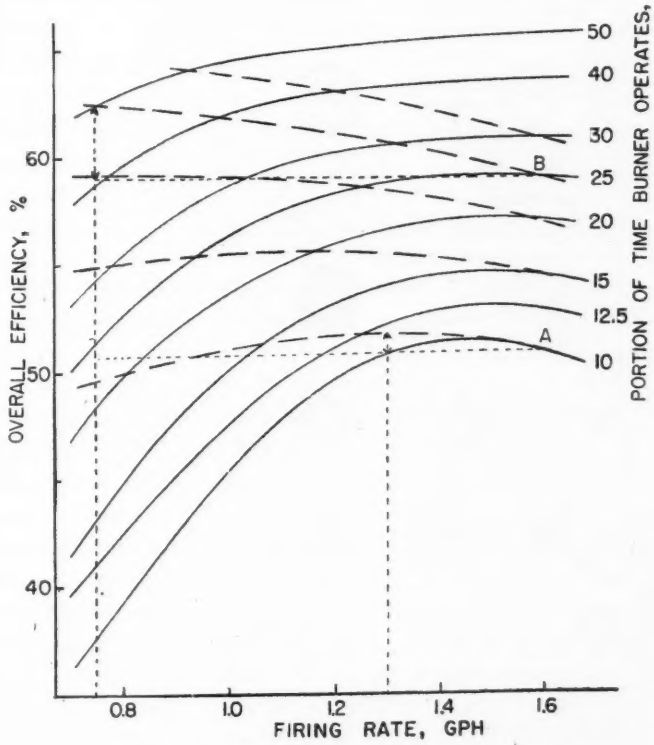
EFFECT OF BURNER OPERATING TIME ON OVERALL EFFICIENCY

FIGURE 6



EFFECT OF BURNER OPERATING TIME ON OVERALL EFFICIENCY

FIGURE 7



INCREASE IN EFFICIENCY ATTAINABLE THRU DECREASE IN FIRING RATE

FIGURE 5

The optimum operating period for Boiler A was found to be different from that of Boiler B. Maximum efficiencies were obtained with Boiler A when the burner operating periods were twenty minutes long. On the other hand the most efficient burner operating period for Boiler B appeared to be thirty minutes or more.

Although lower efficiencies were obtained with the shorter operating periods in both cases, the effect was much more pronounced in the oilburning Boiler B than in the conversion Boiler A. The reason for the difference in this

(*Please turn to page 196*)

Part II: Oilburner wiring Fundamentals

Facts on voltage Drops and wire Sizes

by
J. W. Schulz

YOU MAY KNOW how typical oilburner installations are wired in your locality. You may, in fact, be able to wire up a new job without assistance. However, you've got to go further than that to be an expert at all the electrical aspects of oilburners. You've got to know the fundamentals of electricity, wiring, controls, motors, and everything else electrical that's in an oilheating set-up.

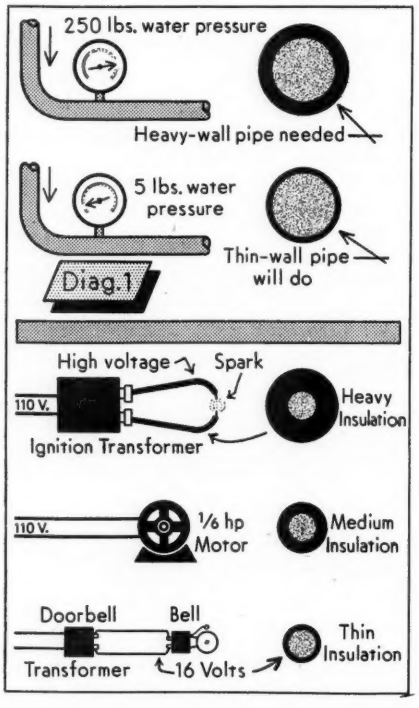
Fundamentals are important

The fundamentals are important. The man who is master of them can solve not only ordinary installation and service problems—he can, in addition, solve extraordinary, seldom-encountered problems. He knows not only how wiring and controls usually are installed—he also knows why they are installed that way. Because of this, on special jobs he can switch to different methods and tricks that are 100% safe and satisfactory in every respect. Master the fundamentals, then, to be able to cope with every electrical and control problem that comes up on oilburner installations!

The first article in this series on controls and wiring covered the natures of direct current and alternating current electricity, clarified volts and amperes, and described transformers. In addition, it gave a few points on ground or neutral wires compared to live-side wires, and showed switches in series and parallel. Additional fundamentals appear in this second article in the FO&OH series of articles on controls and wiring. After all, an oilburner installation man or serviceman must know more about electrical fundamentals than appeared in the first article, which a reader could breeze through in 15 minutes!

If possible, study the first article in this series before you go on with this present article. Read every article in the series, to get maximum value from the articles that will follow on particular makes and models of oilburner control panels and other control devices. The articles that will come later in this series will necessarily be in terms best understood by men who know electrical fundamentals—and who know the precise meanings of the electrical terms used by oilburner experts. Such men don't call a stack control panel "a relay," for example, don't refer to every wall pump as "a Teesdale," and don't use "Square D" for every fused main switch, regardless of make.

Start combing out your vocabulary, if up to now you've made the error of naming wrongly the electrical equipment used on burner installations, or if you've been making the mistake of using trade names when you should have been using common nouns! Don't put yourself in the class with the housewife who insists on calling every household refrigerator "a Frigidaire" — don't, that is, if you want to be a well-qualified oilburner expert and show by your vocabulary that you are!



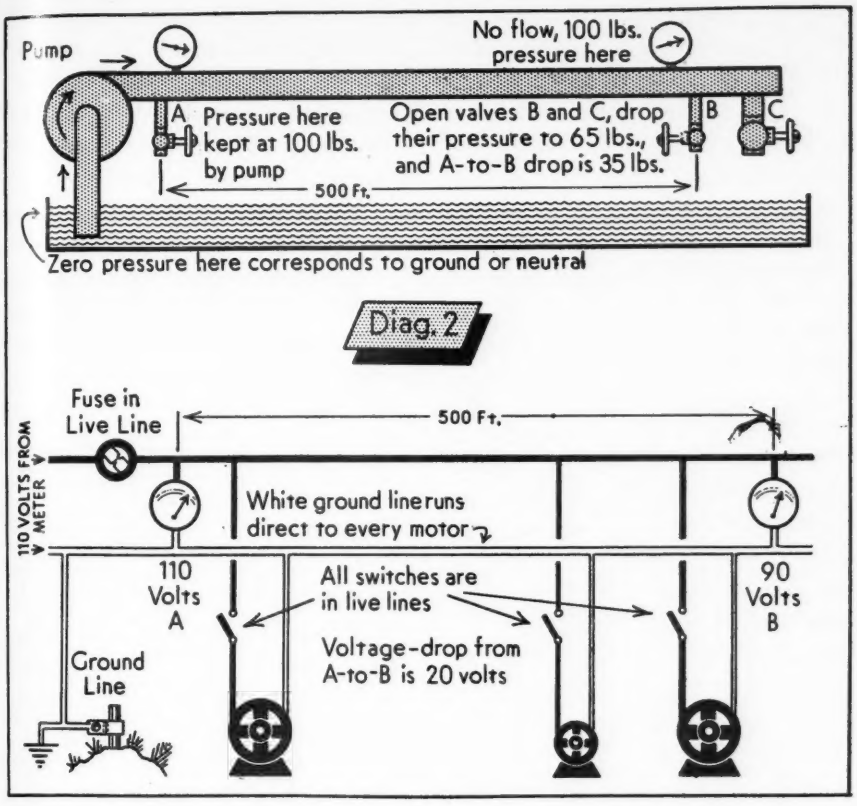
Diag. 1. *High voltage corresponds to high water pressure, for which strong-wall garden hose is needed. For high voltage, heavy insulation is needed. Insulation which is really flimsy is good enough for low-voltage wiring that obtains its power from an ordinary doorbell transformer.*

Insulation and Voltage

Diag. 1 is a hydraulic analogy that compares the wall thicknesses of pipes (used for different water pressure) with thickness or strength of insulation (used for different voltages). Consider the pipe in Diag. 1 to be made of plastic, or consider it to be garden hose instead of pipe, for that improves the analogy. High voltage corresponds to high water pressure, as was outlined in the first article in this series. To withstand 250 lbs. of water pressure, a garden hose needs strong, thick sidewalls. Thinner walls of the same material will withstand five pounds water pressure. Diag. 1 suggests that.

The lower part of the diagram indicates that the wire used for the high voltage current coming from an ignition transformer must be extremely well insulated. The assumption is that this wire may lie in contact with grounded metal. Far less insulation is needed for the 110-volt wires that give current to the 1/6 hp motor in Diag. 1, yet the insulation here must have a certain, definite minimum of electrical and mechanical strength because vicious sparks can fly as a live wire in a 110-volt circuit becomes grounded. Exceedingly thin insulation serves for doorbell circuits, as the bottom of Diag. 1 suggests. Two layers of waxed cotton insulation suffice, although you can easily scratch through them with your fingernail!

Consider the reasons for this: First, low-voltage current corresponds to low-pressure water; it hasn't the power or ambition to flash through an extremely thin layer of insulation. Second, the penalties of a break-through of low-voltage insulation are not great, in the case of a doorbell transformer


Pump
No flow, 100 lbs. pressure here
A
Pressure here kept at 100 lbs. by pump
Open valves B and C, drop their pressure to 65 lbs., and A-to-B drop is 35 lbs.
B
C
500 Ft.
Zero pressure here corresponds to ground or neutral
Diag. 2
Fuse in Live Line
500 Ft.
110 VOLTS FROM METER
White ground line runs direct to every motor
110 Volts A
All switches are in live lines
90 Volts B
Voltage-drop from A-to-B is 20 volts
Ground Line

Diag. 2. *The pressure at the two ends of the 500 ft. water line high in the drawing can be the same only when no water flows through the line; with the pump developing 100 lbs. pressure and the three valves closed. The highest water in the reservoir is under no pressure (no "gage pressure," which is equal to atmospheric pressure, that is). This corresponds to a ground or neutral electrical line, for in such a line the voltage is zero, compared to ground voltage. With the white wire of an household electrical system connected to a grounded water pipe, or a ground pipe driven into the ground as the lower drawing suggests, you can't get a shock from the white wire.*

circuit. Not much happens if you put a dead-short across the terminals of the secondary of a good doorbell transformer. For example, the transformer does not become red-hot and set fire to the house.

What's meant here by the term "dead-short"? It's a short made by connecting together the two secondary terminals by a wire so heavy as to produce a reading of zero from an ordinary voltmeter connected across the secondary terminals. A dead-short across the secondary terminals reduces their voltage difference to zero. With any conductor producing a dead-short, the voltage is the same at each end of the conductor. That's on the basis of taking the voltage reading with an ordinary voltmeter, not with a terrifically sensitive voltmeter that shows millivolts!

Not much happens, as was stated above, if you short the secondary of a doorbell transformer. Ignition transformers can be included; not much happens if you short their secondaries for a few seconds. An important characteristic of transformers, which adds greatly to the safety and practicability of a transformer secondary circuit, is involved in this matter of shorting the transformer secondaries without producing disastrous results. This characteristic is the reason a house does not burn down when the secondary circuit of a good doorbell transformer becomes short circuited when no one is home.

Of greater interest to oilburner servicemen, it is the reason why the output current of an ignition transformer only jolts you, does not kill you, when by accident this full output current goes through your body. Your electrical experiences are incomplete until you've gotten all the jolt you can from an ignition transformer rated at 5,000, 10,000 or 15,000 volts! Received from outdoor, overhead high-tension lines, a 5,000-volt shock is extremely dangerous. That's for sure, because each year people are killed by strong shocks from household 110-volt electricity. A man can be killed, for example, as the result of his grabbing hold of a defective electrical fixture while he is in a bathtub full of water.

The characteristic of transformers that adds to the safety of their secondary circuits lies in the limited output of small transformers of the type used in oilheating installations. This corresponds to the limited input of electricity into their primary circuits, for in terms of wattage (or volt-amperes) a small transformer can take in only a certain small amount of electricity; and because it is not 100% efficient, it gives out less than it takes in.

This can be demonstrated easily with an ignition transformer. Short-circuit its secondary and use an ammeter to ascertain the current-input rate of its primary. You'll find that the maximum current the transformer can draw is surprisingly low. It can take in only a certain amount of watts (or volt-amperes, the product of the input amperes and input voltage).

Transformer Wattage Low

Hence it can give out only limited wattage, for its output wattage or volt-amperes always is less than its input. That's why the shock from a 10,000-volt ignition transformer does not kill you. When by accident such a shock passes through your body, the total amount of current involved probably is less than 150 watts. You can't get from an ignition transformer a shock amounting to 1,000 watts, for the transformer is not big enough for this. All this is not to recommend that you try for maximum shocks from ignition transformers! Be careful! Play safe and always avoid any kind of electrical shock!

Transformers come in different sizes, suitable for different maximum loads. You can buy doorbell transformers and transformers for electric trains which all provide 25 volts, but which are suitable for maximum loads from 25 watts to 200 watts. The big-

ger and heavier the 25-volt transformer, the greater is its load-carrying ability. Only a small 25-volt transformer is needed to provide electricity for one 25-volt control motor, used in an oilheating plant to open and close a valve or damper.

However, an exceedingly large 25-volt transformer is needed on a job where one low-voltage transformer provides electricity for a total of, say, eight to 12 control motors. The 16-volt transformer that rings the bells in a two-family house can be small; 25-watt capacity is ample. However, a 100-family apartment house may need for its bells a 16-volt transformer rated at 50, 100, or 200 watts.

Earlier in this article came the statement that not much happens if you put a dead-short across the secondary terminals of a good doorbell transformer. One reason for this that should be clear now is that in a residence such a dead-short cannot involve much wattage because the transformer is small and has maximum output that can't do much damage by overheating a length of bell wire. A good doorbell transformer is safe for an additional reason. It is built to limit automatically its short-circuit current. A current-limiting low-voltage transformer does not burn out or overheat when its secondary is subjected to a dead-short. Good bell transformers, those "approved" by safety authorities in general, are of the current-limiting type.

Voltage Drop

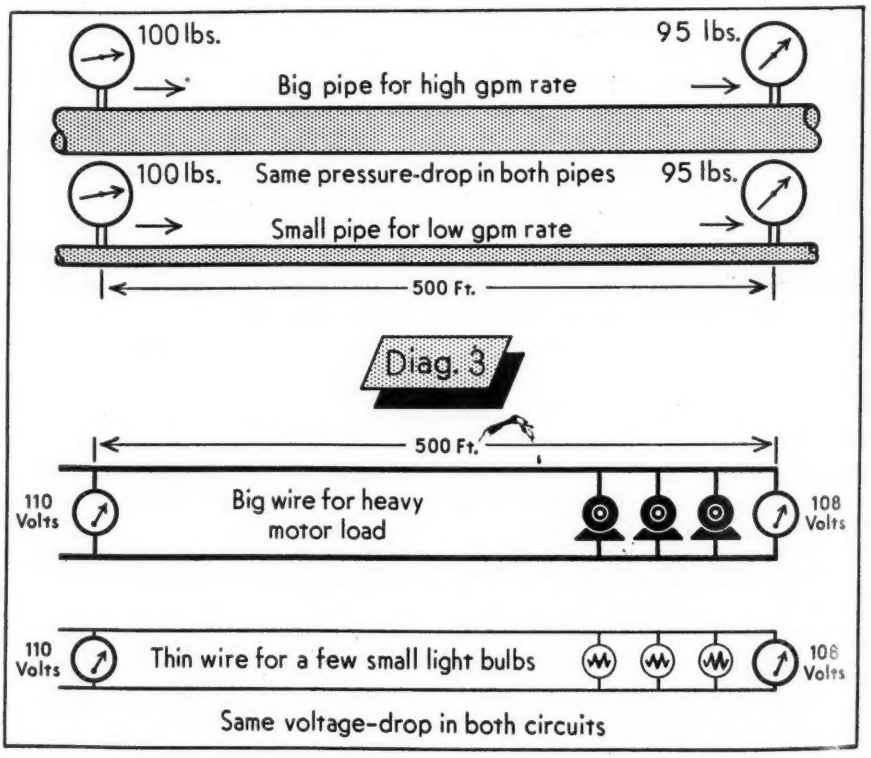
Diag. 3 is an analogy that compares pressure-drop in a hydraulic system with voltage-drop in an electrical system. Pressure difference is what causes the flow of water through a pipe, and the flow of air through a duct. With the pressure precisely the same at the two extreme ends, there can be no flow of water through a pipe and no flow of air through a duct. The rate-of-flow of the water in the upper part of Diag. 2 depends on the pressure difference. Starting out with 100 lbs. pressure at the circulating pump, water will flow through the pipe lazily if the pressure at the right-hand end of the pipe is 99 lbs. pressure. Reduce the output-end pressure on the pipe to 50 lbs., while you maintain 100 lbs. pressure at the input end of the pipe, and water will race through the pipe. Using a pipe of a given size, you increase the pressure-drop if you increase the rate-of-flow through the pipe.

Electricity gives similar results, as the lower part of Diag. 2 indicates. If you put excessive load on a wire of a certain size, you wind up with excessive voltage-drop. The results include overheating of the wire, inefficient use of electricity, and insufficient voltage at the appliance or current-consuming device. The inefficient use of electricity worries oilburner men little, for the sum-total electricity used for an oilheating plant is not great even with the electricity used at low efficiency. The overheating of the wires does not bother burner men, as long as they provide proper size fuses for different circuits.

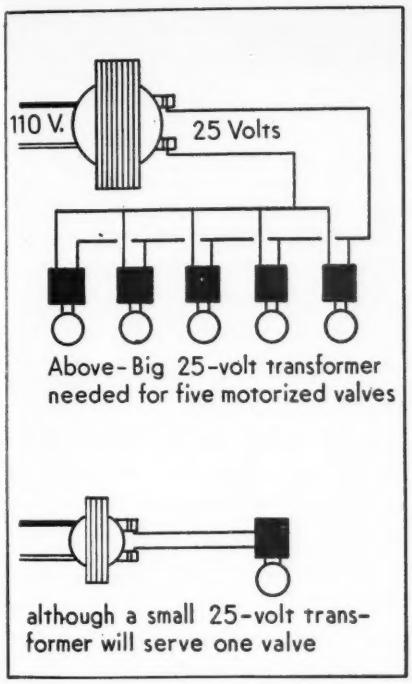
As long as a 15-ampere fuse does not blow out in a circuit made up of #14 wire, for example, a burner man does not worry about overheating the wiring of the circuit. The #14 wire can carry 15 amperes without overheating dangerously; that's why you can use a 15-ampere fuse for a circuit that includes #14 wire.

Insufficient voltage, however, does worry oilburner men. Even with the wire not overloaded on the basis of overheating it, you can have insufficient voltage as the result of voltage-drop. This can occur where the circuit contains an unusually long run of wire, say 200 ft. long, and where wire-to-wire connections and terminal connections are weak.

In starting, the usual oilburner motor (split-phase type) draws much more current than it draws after it is up to speed. Therefore, any voltage-drop trouble encountered usually occurs with the burner motor starting, coming up to usual running speed. During the starting of a burner, immediate ignition of the atomized oil is highly important. It is necessary, if the starting of the burner is to be



Diag. 3. *To arrive at the 5 lb. pressure-drop shown in the upper part of the drawing, you use a big pipe for a high gpm rate of flow, a small pipe for a low gpm rate of flow. Rate of flow in gpm corresponds, in a hydraulic analogy, to amperes in electricity. Hence, as the lower part of this drawing shows, heavy electrical loads need big wires to carry their high amperage, while light electrical loads need wires which are thin or light. That's on the basis of arriving at the same voltage drop for the two 500 ft. circuits shown.*


110 V.
25 Volts
Above-Big 25-volt transformer needed for five motorized valves
although a small 25-volt transformer will serve one valve

A small *25-volt transformer can provide sufficient electricity for one motorized valve that's built for input current of 25 volts, but zone-control systems having many such valves often are powered by one large transformer, perhaps 100 or 200-watt output. That's because at times several valves may open or close simultaneously.*

uneventful. Immediate ignition depends on a good, strong, healthy spark from the ignition transformer.

Good oilburner operation depends on avoiding excessive voltage drop, especially during those highly important start-up seconds when (1) the motor, starting, is drawing considerable current and tending to drop the voltage at the burner, and (2) a strong spark, obtainable only without considerable voltage-drop at the burner, is needed for instant ignition.

Diag. 3 contains additional ideas, related to pressure-drop and voltage-drop. In certain parts of the country, no #14 wire is used for house wiring; only #12 wire is used now because of the increased load of modern lighting arrangements and appliances. Acting on this tip-off, certain burner experts are using #12 wire for exceptional oilheating installations which have unusually long runs of wire, and which have more than one motor.

Be on guard particularly for the chance of another split-phase motor or two starting simultaneously with the burner motor at times—perhaps after current failure and with the heating plant still hot—for this may result in a great drop of voltage at the burner.

Diag. 2 contains a few points about the ground or neutral line and wiring switches and controls in only the live line, not in the neutral line.

Rules for Wiring

These rules about wiring should be familiar to all oilburner installation men and servicemen:

1. Starting at the source of the current, the fuse box, the ground wire or neutral wire should be identified as a white wire (see Diag. 2). The ground or neutral wire of the feed line must always be white.

2. The ground or neutral line must run directly to the current-consuming devices (including mainly the motor and ignition transformer of an oilburner installation), as Diag. 2 suggests in connection with motors.

3. As a corollary of point #2, all switches and controls must be in the live wire to the current-consuming devices; no switches or controls can, when open, break or interrupt the ground or neutral line.

4. Modern practice is to fuse only the live line; each circuit has but one fuse (or circuit-breaker as a substitute for a fuse) and this is in the live leg. The ground or neutral line is "run solid"; it has no fuse.

5. Insulation must be adequate to avoid the troubles of grounds and short circuits.

6. Wire sizes must be adequate to avoid low-voltage difficulties.

7. The wire-to-wire connections and terminal connections must be of adequate electrical capacity, also to avoid low-voltage difficulties and "hot spots" caused by great voltage-drop at one point. All connections should have current-carrying capacity equal to the current-carrying capacity of the wires of the circuit.

8. Fuses and other current-limiting devices (such as motor overload protectors) should be used to provide proper protection, in accordance with national and local regulations. In this respect, oilburner installations should be at least as safe electrically as ordinances and regulations require them to be.

Eastern burner Exposition schedules hundred Exhibits

SEVEN DISPLAY BOOTHS were unsold as of March 9 for equipment exhibits at the Eastern Biennial Exposition of Oil Heat, sponsored by the Oil-Heat Institute of New England and to be held in Boston's Hotel Statler, June 2, 3, 4 and 5. Fred N. Beckwith, exposition manager, is confident of a sell-out and urges all prospective exhibitors to contact him at 839 Beacon St., Boston 15, Mass., or telephone Kenmore 6-9766.

The Exposition, the only major oilheating show ot be held during 1953, is being expanded this year, with invitations to attend being extended to all members of the oilheating industry east of the Mississippi. The four days of the exhibit will extend from 1:00 to 10:00 P.M. on June 2, 3 and 4, from 1:00 to 6:00 P.M. on June 5, the closing date. A hundred leading manufacturers of oilheating equipment are scheduled to display their lines in spaces set up on the mezzanine floor of the Hotel Statler, affording more than a ¼ mile of exhibits.

As an added inducement Beckwith points out that "This Exposition is to be held during the first week of the first month after the close of the heating season, a delightful time to visit New England, take in the Exposition and enjoy our wonderful climate." Then too, it is suggested to manufacturers that they plan to hold regional or general sales meetings since so many of their people will be in attendance.

Round table Forum

On Friday morning, June 5, Robert Gray, editor of FUELOIL & OIL HEAT, will be moderator at a round table forum that will explore "What's ahead for oilheating." Participating will be George Clement, Modern Heat & Fuel Co., Philadelphia, Pa.; Claude A. Potts, U. S. Machine Division and J. L. Minner, Shell Oil Co., presenting respectively the sentiments of an oilheating dealer, manufacturer and oil company. This is to be the only business session of the week, the rest of which has been designed to permit all oilheating men to concentrate on examining the latest developments in oilheating equipment.

Telephone sells Replacements

Burner installation sales Volume maintained without Salesmen

DOWN ON THE EASTERN SIDE of the Baltimore & Ohio railroad tracks in College Park, Md., stands the bulk storage plant and offices of G. T. Wells & Sons. Engaged in the distribution of fueloil, the sale and installation of domestic oilburners, the concern started in the coal business way back in 1921, nearly a quarter of a century ago.

G. T. Wells, who founded the business, has long since retired. The burden of operating the partnership now has fallen on the shoulders of his two sons, H. W. Wells and David E. Wells. David, the younger of the two brothers, graduated from the University of Maryland in 1931, and then went on to study law. After working a while for the government he came into the business and has been there ever since. He takes an active interest in the fueloil and burner industry and at present is a member of the board of directors of the Washington chapter of the OHI. Upon being asked why he left the government to enter the fueloil business, he smiled indulgently, and stated that besides liking the fueloil industry, it enabled him to get his fill of fishing in the summertime. He felt that this was adequate compensation for working about 14 hours a day during the five winter months. One big advantage of small business, he thought, was the ease with which competent people could be gotten as help.

H. Wells *and Jessie Limon keep an eye on general administrative and office operations.*

An outside view *of the offices of G. T. Wells & Sons, College Park, Md.*

H. W. Wells, the older brother, interests himself in many community activities and devotes considerable portions of his time to local government. He now is a commissioner of the Maryland National Capital Park and Planning Commission and has been for the past six years. Elected to office on the town council, he served for four years from 1948 to 1952 and held office at the time the town was first incorporated. In addition he is a vice-president and director of the Citizens Bank of Maryland.

The company was the first in Prince Georges County to erect its own bulk-plant which is supplied by truck transports. Originally a coal company, by 1935 as the community began to see more and more oilburners installed, it was decided to go into the fueloil business. By 1947, the coal business was no longer profitable and was dropped entirely.

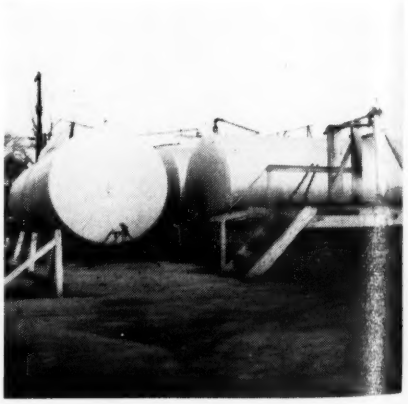
In order to build the fueloil business, the partners sold a considerable number of burners to builders and as the load grew they erected a 150,000 gallon bulk storage plant right next to the B. & O. railroad tracks. The plant is so designed that oil can be pumped from lower tanks to those on a higher level and gravity feed used for truck loading, if required.

At peak operation five fueloil trucks are used and about 2¼ million gallons are distributed per year to 1500 accounts. About one-fourth of these accounts have burners that were installed in early '40's. Five drivers, two servicemen, the two Wells brothers and Jessie Limon, the bookkeeper and cashier, comprise the full force.

This brings us to the unique part of the operation. Note that no salesmen are employed at all, a fact unusual in itself in this business, but even more noteworthy is the fact that well over half of all the burner installations made by this company are replacements of old oilburners. In fact 61% of all their burner installations are replacement jobs and most are sold (about 75%) without a salesman ever visiting the homeowners.

The instruments used to accomplish are the serviceman and the telephone. Since a quarter of the burners installed in College Park were put in the 40's, there is a considerable number about ten years old or older. When the serviceman goes in on a call and sees one of these jobs that would do better with an efficient replacement rather than repair, he makes a note of it and tells his boss David Wells.

Wells then gets on the telephone and talks to the homeowner about replacing the old, inefficient job. He applies no pressure whatsoever to sell the replacement, but simply puts the economic facts before the prospect. In nine cases out of ten, he finds that the customer is impressed with the idea of the



This view *shows the five bulk storage tanks right behind the B & O Railroad tracks.*

The truck *loading rack of G. T. Wells.*

David Wells *poses in front of two bulk storage tanks.*

new burner and is very interested when the benefits of the 1st year warranty is put before him. The phone call almost inevitably results in a sale.

The reasons for this ease in selling are fairly obvious. Noted in the community for its lack of pressure and for years of uninterrupted, faithful and competent service, the word of the company is respected and taken at full value. Sales at an average of about $200 apiece are, therefore, made on the basis of respect and tradition, rather than pressure or determination. The town has grown from 2,000 to 11,000 population in ten years and 75% of those owning oilburners buy from Wells.

This replacement business is important to Wells because of the low price of new gas-fired installations in College Park makes it very difficult to sell new equipment. Business volume, in the face of gas competition is kept up by selling replacements.

Even when new oilfired installations are made by this efficient, small company, it faces a fight to get the fueloil business. Recently they made ten new burner installations for the University of Maryland. These were 4 to 8 gph burners, each with two-275 gallon tanks. In spite of making the installations, however, they lost the fueloil business when a competitor cut the price one cent a gallon.

This is not the general rule, however, for 90% of the fraternity houses at the University buy their fuel from Wells and each is a 5,000 to 10,000 gallon per year account. A short while ago, Wells added Sonotor to 1,000 tanks to protect his customers tanks from deterioration. They did not charge for this and only two of the 1,000 customers questioned the practice.

Employees stay a long time with this concern. Of the two servicemen, one has been on the job for ten years and the other six. With the fueloil truck drivers it is somewhat the same story, with two being around three years, and one for six.

About 90% of the jobs are hot water heating systems and the service workload is fairly light with the two servicemen averaging about 80 calls each for the month of December, one of the heaviest of the service months.

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Bureau of Mines tabulates Fuels used since 1935

BUREAU OF MINES Information Circular 7657 is a compilation of statistics covering competitive fuels consumed for heating of residential and commercial buildings during the years 1935 through 1951. The tabulations presented cover the amounts of liquid fuels, gaseous fuels, solid fuel and electricity reported as used for heating dwellings and commercial buildings. Because associated household uses could not be separated readily, the totals for gaseous fuels include amounts consumed for both cooking and lighting purposes.

In 1935 the Circular shows that fueloils were used for 9.6% of all residential uses and for commercial space heating and that this had increased to 28.2% of total by 1951. Similarly gaseous fuels grew from 9.4% in 1935 to 25.5% in 1951 and electricity from 0.9% to 3.3%. Solid fuels declined from 80.1% in 1935 to 43.0% in 1951.

Sources for the figures on liquid fuels were the Mineral Market Reports of the Bureau of Mines covering annual sales of fueloil and kerosene, including grades 1 to 6, reported as sold for space heating, and kerosene and No. 1 fueloil delivered as range oil. Gaseous fuels, taken from figures published by the American Gas Association, cover natural, manufactured and mixed gas reported as sold for residential and commercial uses, with quantities consumed for cooking and baking in the smaller commercial establishments included. Solid fuels also are taken from the Bureau of Mines Mineral Market Reports and show retail deliveries, the major portion of which is used for space heating.

Table 2 is reproduced herewith from the Circular, tabulating "Fuel consumption for all residential uses and for commercial space heating, according to physical state at point of combustion."

Year	*Distillate Grades* 1, 2, 3 and 4*	*Range Oil #1 Fuel Oil and Kerosene**	*Residual Grades* 5 and 6*	*Total**
1935	53,797	21,526	23,056	98,379
1936	69,859	27,292	29,398	126,549
1937	81,235	32,259	35,382	148,876
1938	82,388	33,707	35,935	152,030
1939	97,131	37,061	39,101	173,293
1940	115,533	44,692	44,846	205,071
1941	120,908	46,110	46,606	213,624
1942	121,506	44,923	47,483	213,912
1943	112,581	44,097	42,670	199,348
1944	111,729	47,636	40,474	199,839
1945	121,342	51,021	43,874	216,237
1946	139,637	60,564	49,734	249,935
1947	178,359	74,114	56,402	308,875
1948	200,024	84,163	58,639	342,826
1949	190,387	78,523	60,414	329,324
1950	220,947	94,662	72,716	388,325
1951	249,258	102,847	76,164	428,269

**Liquid fuels (thousands of barrels).*

Service Managers organize national Group at Meeting

ON TUESDAY and Wednesday, March 10 and 11, delegates from Service Managers' Clubs of Washington, Baltimore, Philadelphia, New York and Boston met at the Hotel Lexington in New York City and organized the National Association of Oilheating Service Managers. The organizational meeting was the outgrowth of months of ground work on the part of Ray F. Horan, who was named honorary president and life member of the national association at this first meeting.

Two delegates from each of the five cities named above attended the meeting, which in effect was the first national convention of oilheating service managers and presumably the first to ever entertain the ambition of welding the oilheating service managers of the nation into a single organized unit. Before the two-day meeting was over, a tremendous amount of organizational work was done and the new association was launched.

Delegates who attended

The following service managers represented the listed local service managers' clubs as delegates to the national meeting:

Washington, D. C.: Sam J. Richardson, Hesse Company and C. Newton France, Colonial Fuel Oil.

Baltimore: John H. Engel, Jr., C. Hoffberger Company and Ralph D. Iglehart, General Automatic Fuel Oil Company.

Philadelphia: Frank R. Knorr, Modern Heat and Jack Davidson, Cities Service Oil Company.

New York: Joseph Matachinskas, Brooklyn-Cornell Utilities, Inc., and Edward Baerenklau, Baerenklau & Company, Inc.

Boston: H. W. McKee, Mass. Wharf Coal Company and William H. Wildes, Buckley & Scott.

In addition as guests were Mr. Horan of New York and Frank Harbin of Baltimore.

Horan was appointed temporary chairman to preside over the meeting until Joseph Matachinskas was appointed permanent chairman. In his opening remarks Horan emphasized the need for a unified, cohesive group and was of the belief that an effective interchange of technical and administrative information could be accomplished successfully by forming a national organization of service managers. He further stated that service managers were one of the most important groups in the industry and could be adequately represented and function effectively only if they were a nationally-organized group.

Officers elected

A nominating committee composed of Jack Davidson, chairman, Ed Baerenklau and E. N. France, submitted a slate for national offices and by unanimous vote Hugh W. McKee was elected president; John Engel, vice-president; Joseph Matachinskas, secretary and Jack Davidson, treasurer. The election of national officers was followed by the designation of Ray Horan as honorary president and first life member. The name, National Association of Oilheating Service Managers, was then selected for the group.

Next, the standing committees and their chairmen were appointed. These are: William Wildes, Constitution and by-laws; Jack Davidson, Finance; Ed Baerenklau, Publicity; Frank Knorr, Commercial-Industrial Burner Service; Sam Richardson, Domestic Burner Service, Ralph Iglehart, Membership; Speakers, C. N. France; Hugh McKee, Labor; Time and Place, Joe Matachinskas.

Frank Knorr, of Philadelphia, was honored by a motion commending him as the founder of the first metropolitan service managers club. Back in 1948 Knorr organized a service managers club in that city which is still actively functioning and proving of continued service to many companies in that area.

Ray Horan, *honorary president of the association, and Hugh McKee, elected first president at the organizational meeting.*

A formal luncheon was held on Wednesday in the Hunt Room at the Hotel Lexington, and the speaker for the occasion was C. Boyd Lipsett. An oilheating engineer of considerable experience and repute, he kept the group interested with his serious message interspersed with considerable droll humor and dry wit. In his remarks he stressed the need for such a group but said it would be successful only if it produced a high degree of cooperation among members and led to a sincere and complete interchange of information. He was of the opinion that much good could be accomplished between heating dealers and equipment manufacturers, especially in relation to equipment design problems and servicing. A practical approach to all problems should be the main duty of the newly formed group, and would, in his opinion, prove to be the most effective.

Membership Standards

The organization set up standards affecting those eligible for membership and defined the term Service Manager as being "any one actively engaged in supervising the efforts of two or more qualified men actively employed in the servicing of oilheating equipment."

Those who qualify as service managers and wish to join the National Association of Oil Heating Service Managers (dues $2.00 per year) should contact Ralph Iglehart, chairman of the membership committee, at 2300 Sinclair Lane, Baltimore, Maryland.

In those areas where local service managers' clubs exist, individual service managers can only belong to the national association by joining the local group affiliated with the national association. Where there is no local club, group or association, service managers can join as individuals if they fulfill the necessary requirements. In all cases members pay dues of $2 per year. Local groups will be assessed $2 for each member and, in the case of individuals, the $2 fee is payable direct to the treasurer. A resolution was passed inviting service managers and service clubs to join the national group.

The chairman of the Time and Place Committee reported that the next semi-annual meeting would be held in Philadelphia during the month of September, with the exact location and date to be determined.

The purpose of the new organization as officially recorded is "to foster an extensive and complete interchange of ideas, information and procedures among oilheating service managers throughout the nation; to improve and upgrade the position of oilheating service managers; and to further improve and standardize the service rendered to the public by the oilheating industry, thereby enhancing and increasing the prestige of, and acceptance by the public of automatic oilheating."

Top: *Delegates to the first meeting of the National Association of Oilheating Service Managers, from left to right, Joseph Matachinskas, New York; William Wildes and Hugh McKee, Boston; Edward Baerenklau, New York; Frank Knorr and Jack Davidson, Philadelphia.*

Bottom: *Delegates from Washington and Baltimore (left to right) C. N. France, Samuel Richardson, Ralph Iglehart and John Engels.*

Underwriters' revise oilfired unit Standards

RECENTLY Underwriters' Laboratories Incorporated forwarded copies of the second draft of a proposed standard for oil-fired units. The second draft has been modified in an effort to equitably adjust the requirements in the first draft on which opinions of interested parties differed.

The newly revised requirements included in the proposed Standard reflect the current practices of Underwriters' Laboratories as they are comparable to those tentative requirements which the Laboratories have used as a basis for the listing of oilfired units during the past year.

It is the Underwriters' Laboratories opinion that this proposed revised Standard will codify the requirements on a reasonable and practical basis and that it will provide an adequate instrument for manufacturers as well as for the Laboratories' own staff. The adoption of this proposed Standard is expected to become effective on all oilfired units labeled after May 1, 1954.

The scope of the requirements includes oilfired boilers, furnaces and heaters; units intended for use where a competent attendant will not be constantly on duty in the room where the unit is located, while the burner is in operation and include automatic safety controls to prevent abnormal discharge of oil at the burner in the case of ignition or flame failure.

Units intended for use only when a competent attendant is on duty constantly in the room where the unit is located, while the burner is in operation are not required to be equipped with automatic safety controls to prevent the normal discharge of oil at the burners. The scope of the requirements further includes illustrations and the information to be furnished the laboratories for each unit submitted for test as well as classifying data such as model designation of appliance, name, size, designation of burner, etc.

General Requirements

Part II concerns itself with the General Requirements for:

1. The construction and assembly standards for each unit which include accessibility, burner equipment, controls, control application, damper, electrical equipment and wiring and materials. It further concerns itself

2. With performance under three headings: General, which sets up the generic standards including uniformity and reliability of operation when installed and adjusted. Flue gas temperatures are included under performance with a statement that maximum temperature of such gases measured, as described in appendix D of the requirements, when such units are fired at rated inputs shall not be more than 843°F. above ambient. The final category under performance is clearances and units are classified under certain forms for installation distances which concern adjacent combustible partitions or floors.

Part III, Oilfired Boilers sets up general construction and performance standards which affect the assembly of oilfired units so that they shall be constructed, equipped, inspected, tested and marked in accordance with the ASME boiler construction code. Under Performance, limit controls are regulated as to maximum allowable settings and units further classified under forms 1 and 3 for installation with standard clearances. Further clearances are discussed for alcove or closet installations and test installation guides set up for both standard clearance and alcove or closet clearances.

Part IV, Central Oilfired Furnaces: Construction standards concern requirements for baffles, base, casing,

combustion chamber, air filter, flue collar, heating surface joints, limit controls, furnace openings, radiators and radiator shields.

Performance requirements effect standard clearances for furnaces alcove or closet installations, test installations for both of the foregoing, initial test conditions, mechanical atomizing burner tests, and vaporizing burner tests.

Floor Furnaces

Part V, Floor Furnaces: Construction standards affect air temperature, assembly, baffles, supports, casing, combustion chambers, disposal of combustion products, flue collar, heating surface joints, lighting door, radiators and radiators shields.

The performance standards for floor furnaces regulate the outlet air temperatures, continuity of operation, temperatures, the covered register, flooded burners, static load, test installation and the specific tests occasioned thereon.

Part VI, Recessed Heaters: Cover the same categories as those for floor furnaces in Part V with the exception of casing requirements but including draft regulator requirements that do not appear under the construction requirements for floor furnaces.

Performance requirements affect only outlet air temperature of recessed heaters, continuity of operation, maximum temperatures on adjacent combustible construction, test installation, and test criteria.

Part VII, Unit Heaters: Construction requirements for unit heaters affect the same conditions as for recessed heaters except for the draft regulator and in addition heater openings and air filters.

Performance standards set up limits for outlet air temperature, continuity of operation, temperatures of adjacent surfaces, test inclosures for floor mounted heaters and also for suspended heaters, test installation as well as mechanical atomizing burner and vaporizing burner tests.

Part VIII, Water Heaters: Include in construction regulations storage vessels, temperature control and the integral fuel tank in addition to the standard construction regulations.

Performance requirements are set up in relation to outlet water temperatures, pilot fire temperature, adjacent combustible partition surface temperatures as well as test installations with standard clearances or alcove or closet applications.

Part IX, Air Heaters: Construction requirements for air heaters in addition to the standard ones categorized for all equipment include equipment for outdoor use, radiation shields and integral fuel tanks while those for performance include the same categories as for other types of oilheating equipment.

Part X, Inspection of Listed Products: Gives general information or labels, cost of service cooperation from the manufacturer, use of name of Underwriters' Laboratories, Inc., test equipment at the factory and also instructions to inspectors.

Appendices

The Appendices, ten in number and consecutively listed in alphabetized fashion, deal with:

a. suitability of motor application
b. operating instructions
c. installation instructions
d. factory inspection test
e. test conditions and instrumentation
f. standard clearances for test installation
g. alcove or closet test installations
h. ducts for furnace test
i. installations for floor furnace tests
j. types of lock-seams.

Tables of standard clearances, clearances with specified forms of protection and listing maximum allowable temperatures appear in the proposed standard and apply to all construction and performance categories as specifically listed above.

Standard clearances above, side and rear, front, and flue pipe are listed in tabular form for all types of oilfired units, as listed in categories form 1, form 2, form 3, form 4, and form 5. These classifications are as follows:

Form 1 includes forced warm air furnaces, water wall type hot water boilers, water wall type steam boilers operating at not over 15 lbs. per square inch gauge pressure, floor mounted unit heaters and water heaters; not larger than 100 cubic feet in size including blower compartments of furnaces.

Form 2 includes gravity warm air furnaces not larger than 100 cubic ft. in size.

Form 3 includes low heat appliances which include steam boilers operating at not more than 50 lbs. per square inch gauge pressure or not larger than 10 boiler hp regardless of operating pressure and boilers, furnaces except floor furnaces and heaters not classified under forms 1, 2, 4, and 5.

Form 4 includes medium heat appliances, which include steam boilers other than mentioned above.

Form 5 includes suspended type unit heaters not more than 100 cubic ft. in size.

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Price Controls removed from No. 2 heating Oils

ON MARCH 12 the Office of Price Stabilization issued General Overriding Regulation 44 which removed No. 2 heating oils from price control. The Regulation was effective immediately and covered crude oil, natural gas and all petroleum products.

The OPS explained its reason for removing No. 2 heating oils from controls by saying that "a study has revealed that production and stocks of No. 2 heating oils are well above last year and appear to be ample to meet any foreseeable demand during the minor portion of the heating season remaining." During February the OPS issued a petroleum decontrol order, which excluded No. 2 heating oil. Later, various interpretations beclouded the issue to the point where it was necessary for the OPS to issue an official statement declaring that No. 2 heating oils were regulated by price ceilings any place in the United States "when sold as such."

The issuance of General Overriding Regulation 44 has cleared up this confusion and definitely removes No. 2 heating oils from price controls. OPS officials had intimated that removal of controls would result in price increases, but oil company officials have indicated that such a move is unlikely on any general scale very soon.

1952 Installations were 777,604

NOW THAT ALL of the official data are in hand it is clear that total installations of domestic oilburners in 1952 were substantially higher than the preliminary estimates published in our January issue. The final figure of 777,604 was comfortably above the gas industry's 747,755 as reported in the March issue of "Gas Heat."

This was the calculation for the final 1952 oilheating figure:

Factory shipments		782,940
Less exports of		27,081
Net domestic shipments		755,859
Dealer stocks		
Jan. 1, 1952	116,242	
Jan. 1, 1953	94,497	
Stocks declined		21,745
Indicated installations		777,604

There was considerable variation in the virility of the market with the Midwest again showing the best gains. The table following shows the market significance of each general area:

Sectional Percentages

	1952 Installations	*Total In Use 1/1/53*	*Gain Over 1/1/52*
New England	15.9%	17.3%	10.6%
Mid-Atlantic	37.2	41.2	10.0
South Atlantic	4.1	4.7	10.0
Midwest	34.1	26.2	16.1
South Central	1.2	1.3	10.4
Mountain	1.4	1.2	8.6
Pacific	6.1	8.1	5.3
All Sections	100.0	100.0	11.2

In the large table at the right we have left the totals for oilburner replacements and for conversions from other fuels just as they were in our preliminary estimates published in January. That throws the entire increase or correction into the new home column, where obviously it belongs.

New homes now become 35.8% of total installations whereas we had called them only 30.9% in January. For the year 1951 they had been 37.8%, although that was a smaller total year. It now appears that oilheating went into 278,522 new homes in 1952, compared with 255,173 in 1951.

Our sampling methods used for the January issue preliminary figures are not catching enough of the new home work, which indicates that an increasing share of this work is by-passing the dealers and going direct to the builder from the manufacturer or jobber. As a result our 1953 data will carry a stronger correction factor for this.

Conversions from other fuels continue to be the principal application of oilburners, though just barely more than half of the total. This ratio will decline through the years ahead, as indicated by the chart published in our March issue. Replacements, of course, will increase significantly.

Distillate Oilburner Installations by States, 1952

	Burners In Use 1/1/52	INSTALLATIONS *New Homes*	*Replacements*	*Conversions*	*Total*	*Lost to Other Fuels*	*Burners In Use 1/1/53*
Maine	68,478	4,126	962	3,777	8,865	271	76,110
New Hampshire	67,135	3,764	877	3,446	8,087	248	74,097
Vermont	19,119	1,448	338	1,324	3,110	95	21,796
Massachusetts	526,530	29,569	6,891	26,992	63,452	1,945	581,146
Rhode Island	71,725	4,419	1,030	4,038	9,487	291	79,891
Connecticut	239,403	14,145	3,295	12,887	30,327	930	265,505
NEW ENGLAND	992,390	57,471	13,393	52,464	123,328	3,780	1,098,545
New York	1,031,751	23,591	16,623	81,403	121,617	5,365	1,131,380
New Jersey	526,125	12,698	8,948	43,828	65,474	2,888	579,763
Pennsylvania	484,074	13,366	9,418	46,112	68,896	3,040	540,512
Delaware	37,151	1,116	786	3,852	5,754	254	41,865
Maryland	230,035	3,982	2,806	13,741	20,529	906	246,852
Dist. of Columbia	65,774	1,335	941	4,567	6,843	303	71,373
MID-ATLANTIC	2,374,910	56,088	39,522	193,503	289,113	12,756	2,611,745
Virginia	129,464	11,432	1,687	334	13,453	319	140,911
West Virginia	2,134	528	78	16	622	15	2,663
North Carolina	66,338	8,327	1,228	243	9,798	232	74,676
South Carolina	19,614	2,356	351	92	2,799	66	21,996
Georgia	12,704	1,850	273	54	2,177	52	14,556
Florida	43,082	2,870	420	53	3,343	79	45,926
SOUTH ATLANTIC	273,336	27,363	4,037	792	32,192	763	300,728
Michigan	263,358	18,393	4,299	24,353	47,045	1,749	304,355
Ohio	112,566	11,643	2,722	15,417	29,782	1,107	138,519
Indiana	99,181	9,207	2,152	12,202	23,561	875	119,715
Illinois	278,376	23,131	5,407	30,638	59,176	2,200	329,945
Wisconsin	191,473	12,794	2,991	16,952	32,737	1,217	220,002
Minnesota	201,859	10,876	2,542	14,420	27,838	1,034	226,121
Iowa	94,015	7,351	1,718	9,749	18,818	699	110,416
Missouri	82,720	4,520	1,057	6,009	11,586	430	92,819
Kansas	9,509	726	170	970	1,866	69	11,136
Nebraska	46,365	2,250	526	2,978	5,754	214	51,379
South Dakota	25,823	1,275	298	1,693	3,266	121	28,670
North Dakota	26,517	1,513	354	1,867	3,734	144	29,753
MIDWEST	1,431,762	103,679	24,236	137,248	265,163	9,859	1,662,830
Kentucky	9,004	1,983	292	58	2,333	55	10,990
Tennessee	13,633	1,916	283	56	2,255	53	15,552
Alabama	8,320	793	117	23	933	22	9,114
Mississippi	1,507	197	29	7	233	6	1,705
Arkansas	2,472	264	39	8	311	7	2,737
Louisiana	9,751	595	88	17	700	17	10,346
Oklahoma	1,886	330	49	10	389	9	2,217
Texas	29,248	1,787	263	49	2,099	50	31,034
SOUTH CENTRAL	75,821	7,865	1,160	228	9,253	219	83,695
Montana	7,201	754	534	267	1,555	149	8,073
Idaho	13,983	1,546	1,096	546	3,188	306	15,769
Wyoming	3,223	565	401	200	1,166	112	3,876
Colorado	10,856	641	454	227	1,322	127	11,597
Utah	10,495	754	534	269	1,557	149	11,369
Nevada	10,490	490	347	174	1,011	97	11,057
New Mexico	2,727	75	53	28	156	15	2,815
Arizona	13,645	568	403	194	1,165	113	14,294
MOUNTAIN STATES	72,620	5,393	3,822	1,905	11,120	1,068	78,850
Washington	182,282	10,906	9,032	5,101	25,039	2,405	195,884
Oregon	116,619	6,131	5,077	2,867	14,075	1,352	124,265
California	184,816	3,626	3,004	1,691	8,321	799	189,334
PACIFIC STATES	483,717	20,663	17,113	9,659	47,435	4,556	509,483
UNITED STATES	5,704,556	278,522	103,283	395,799	777,604	33,001	6,345,876

COMMERCIAL & INDUSTRIAL oilburning

Additional Equipment pays Dividends

Draft Controls and night Setbacks drastically reduce fuel costs at Fairlington, Va.

by
Lansing Horst

SITUATED IN the State of Virginia, on the heights and slopes of two large hills, with the valley between furnishing the roadbed for the Henry G. Shirley Memorial Highway, stands the Fairlington garden apartment development, one of the largest in the world.

Constructed during World War II by the Defense Homes Corporation, a wartime government agency, it covers over 320 acres and comprises 587 buildings with 3439 apartments, ranging from 1 bedroom to 3 bedroom duplexes.

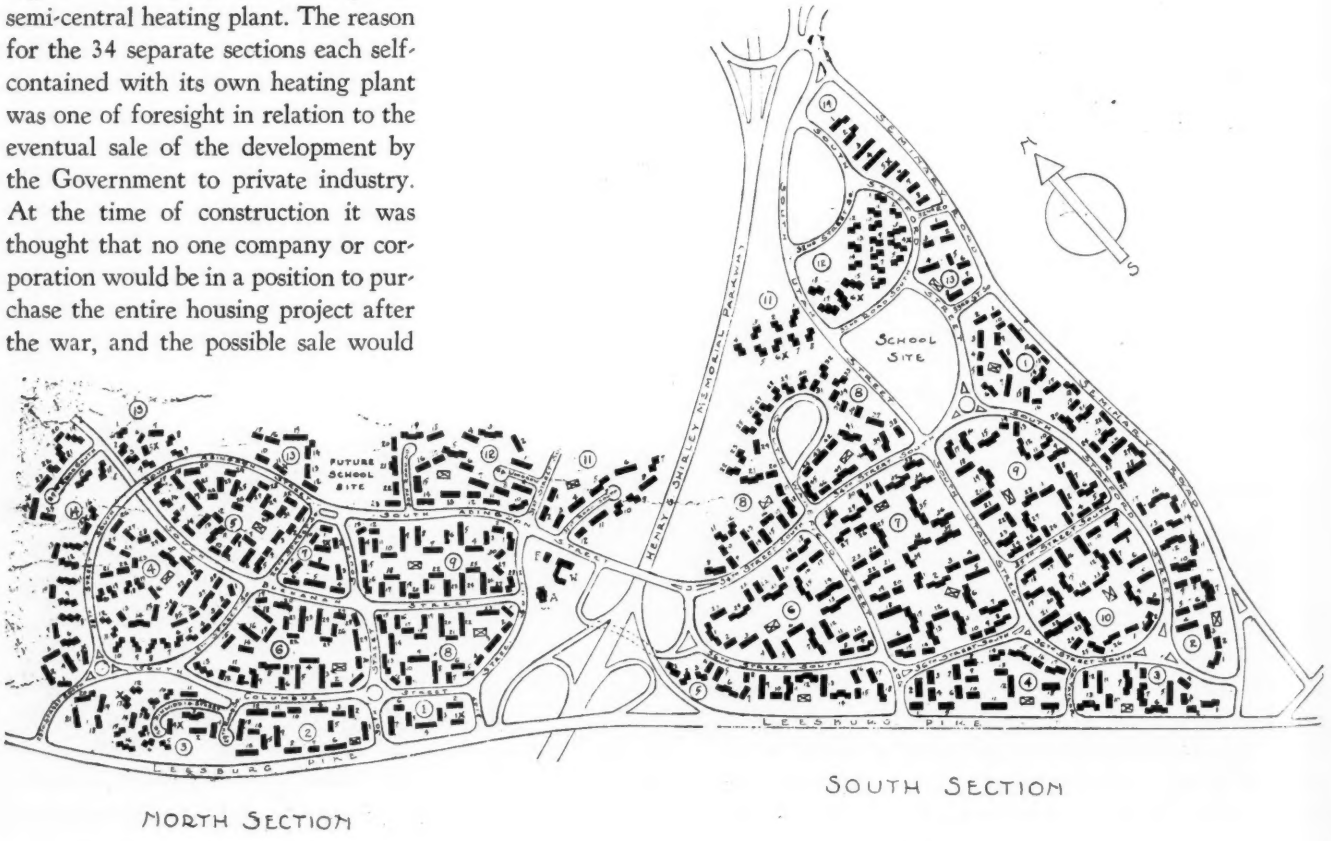
In 1947, the Fairmac Corporation bought Fairlington from the government for a figure that is usually regarded to be about $35,000,000. The development is divided into 34 blocks or sections as shown in the accompanying illlustration, each with its separate semi-central heating plant. The reason for the 34 separate sections each self-contained with its own heating plant was one of foresight in relation to the eventual sale of the development by the Government to private industry. At the time of construction it was thought that no one company or corporation would be in a position to purchase the entire housing project after the war, and the possible sale would be facilitated if it could be bought in smaller, less costly sections by separate buyers.

Time was to tell a different story, however, for it was bought in 1947 by Fairmac as one piece of property including all 34 sections for the figure mentioned above. Not only did Fairmac purchase Fairlington but included in the transaction was McClean Gardens, another large garden apartment housing development, situated in Washington, D. C., proper.

Originally all 34 heating plants at Fairlington were fired by coal and about 23,000 tons were used per year for an average winter, at an annual cost of about $230,000. The manpower required for coal-firing plus the dust problem everytime coal was delivered led William A. Ziegler, the general manager of Fairmac, to seriously consider converting to oil as it became more plentiful after the war. Trouble with soot, smoke and fly ash occasioned by the use of solid fuel further aggravated the situation, and the climax was capped by the coal strike which led to fuel supply troubles. The upshot was, that Mr. Ziegler decided to convert to oil, a decision that eventually resulted in many happy memories for the management of the development.

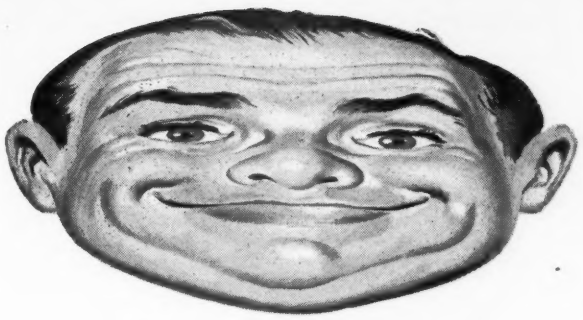
Soon after its acquisition by Fairmac, Fairlington, with its 34 heating plants each with 3 or 4 Spencer boilers, was converted to oil and 85 Petro model W-4 horizontal rotary burners, each with a capacity of 25 gph, were installed, with fuel pumps capable of delivering 60 gph. Along with this a Johnson Duo-Stat control system had been installed in each of the 34 blocks to control the water temperature of the hot water heating systems.

These pneumatic control systems



NORTH SECTION

SOUTH SECTION



IT'S FLATTENED OUT

TO GIVE YOU MORE HEADROOM!

IT'S DIVIDED IN HALF TO GO

THROUGH NARROW OPENINGS!

SPENCER'S *New Low-Waterline* BOILER

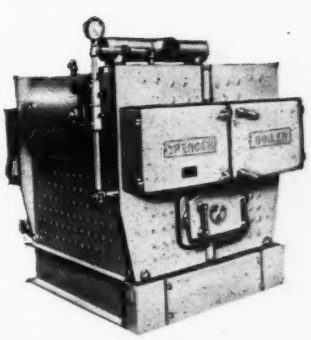
An outstanding success! Here's why Spencer's new boiler, introduced a few short months ago, has already won wide acceptance:

In existing buildings—divided design permits entry through narrow basement openings. No tearing out of walls. The two watertight sections can be moved in separately, yet require no welding for installation.

In new buildings—overall height of this new boiler is approximately 25% less than conventional firebox boilers . . . makes possible lower basement ceilings . . . cuts down excavation expenses.

Other time-tested Spencer advantages: It's *quickly convertible* from mechanical to hand firing. It's *fast steaming*, thanks to its staggered rows of fire tubes. It's *self-cleaning*. Has a high firebox and *instantaneous or tank-type service water coils* in a wide range of capacities.

Only one of Spencer's Quality Line of Commercial and Residential Boilers



Spencer's Divided Low-Waterline Boiler is available in sizes from 3,500 to 42,500 sq. ft., steam.

SPENCER HEATER
LYCOMING-SPENCER DIVISION
WILLIAMSPORT LYCO PENNSYLVANIA

H SBI

THERE IS A SPENCER FOR EVERY BUILDING . . . FOR EVERY FUEL

fueloil & oilheat

operate off of a dual bulb element with one bulb responding to outside temperatures. This in turn operates a 3-way valve which tempers the water entering the system in such a way as to achieve an even interior temperature of 72° F. When first installed the control systems provided no automatic night setback for any of the 34 sections of the housing project.

The immediate tangible result of the conversion to oil was to reduce manpower required to operate the heating plants from 135 to 19, including the chief engineer. Now only two men are required for the night shift and they cover the entire 34 plants to assure continued operation.

Fairlington also utilizes a total of 34 service trucks for all types of maintenance. Of these, six are devoted to heating plant service alone and of the

Table I

COMPARATIVE STATEMENT OF FUEL OIL CONSUMPTION OF JANUARY, 1952 AGAINST JANUARY, 1953*

Boiler House Number South Side	Consumption January '52	Consumption January '53	Boiler House Number North Side	Consumption January '52	Consumption January '53
1	24,532	19,409	**1	6,116	4,885
2	13,891	12,949	2	14,153	12,588
3	11,368	9,953	**3A	6,674	5,879
4	15,104	12,880	**3B	8,588	6,897
5	13,967	13,696	4	30,103	26,568
6	25,247	21,435	5	27,215	24,513
7A	19,821	18,182	6	29,678	24,635
7B	18,963	16,026	**7	7,393	6,677
8A	17,411	15,321	8	22,168	20,263
8B	13,644	13,029	9	30,501	26,887
9	25,385	23,165	10	9,391	8,246
10	22,872	21,966	12	16,215	15,604
**11	5,341	4,563	**13A	6,204	5,677
**12A	8,107	7,027	**13B	6,683	5,570
**12B	5,658	4,668	**14A	7,990	6,440
**13	5,578	4,999	**14B	6,292	5,935
**14	6,265	5,437	**14C	5,435	4,200

	Total Consumption January '52	Total Consumption January '53	Difference (Savings)	Amount (Savings)
#5 Oil	92,324	78,854	13,470	$1,091.07
#6 Oil	401,602	357,556	44,046	2,705.75
			57,516 gals.	$3,796.82

*January 1952 and January 1953 had the same number of degree-days (747) in the Fairlington, Va., area. This provided a convenient standard for comparing performance with and without the newly-added draft and control equipment.

**No. 5 oil jobs and equipped with night setback.

Table II

COMPARATIVE STATEMENT OF FUEL OIL CONSUMPTION

October, November, December 1951—October, November, December, 1952

Boiler House Number	Year	Degree Days Oct.-Nov.-Dec.	Gallons Fuel Consumed Oct.-Nov.-Dec.	Average Gallons Per Degree Day	Average Gallons Saved Per Degree Day	Total Fuel Saved Oct.-Nov.-Dec. 1952	Approx. Cash Saving Oct.-Nov.-Dec. 1952
#1 North*	1951	1503	14,337	9.53			
#1 North*	1952	1606	12,075	7.52	2.01	3,228	$ 261.47
2 North	1951	1503	32,498	21.62			
2 North	1952	1606	30,601	19.05	2.57	4,127	253.52
#3-A North*	1951	1503	15,871	10.55			
#3-A North*	1952	1606	14,269	8.88	1.67	2,682	217.24
#3-B North*	1951	1503	19,165	12.75			
#3-B North*	1952	1606	16,978	10.57	2.18	3,501	283.58
4 North	1951	1503	67,370	44.82			
4 North	1952	1606	59,153	36.83	7.99	12,832	788.27
5 North	1951	1503	62,018	41.26			
5 North	1952	1606	54,022	33.64	7.62	12,238	751.78
6 North	1951	1503	66,644	44.34			
6 North	1952	1606	57,085	35.54	8.80	14,133	868.19
#7 North*	1951	1503	18,650	12.40			
#7 North*	1952	1606	16,010	9.97	2.43	3,903	316.14
8 North	1951	1503	46,924	31.22			
8 North	1952	1606	47,251	29.42	1.80	2,891	177.59
9 North	1951	1503	70,040	46.60			
9 North	1952	1606	62,820	39.11	7.49	12,029	738.94
11 North	1951	1503	19,579	13.03			
11 North	1952	1606	18,575	11.57	1.46	2,345	144.05
12 North	1951	1503	36,889	24.54			
12 North	1952	1606	34,358	21.39	3.15	5,059	310.77
#13-A North*	1951	1503	13,792	9.17			
#13-A North*	1952	1606	13,096	8.15	1.02	1,636	132.68
#13-B North*	1951	1503	14,945				
#13-B North*	1952	1606	16,379	Night set-back not adjusted until December, 1952			
#14-A North*	1951	1503	17,413	11.58			
#14-A North*	1952	1606	15,226	9.48	2.10	3,373	273.21
#14-B North*	1951	1503	16,323	10.86			
#14-B North*	1952	1606	10,776	6.71	4.15	6,665	539.87
#14-C North*	1951	1503	12,263	8.15			
#14-C North*	1952	1606	10,216	6.36	1.79	2,875	232.88
						Total 93,517 gals.	$6,290.18

Rate used—Number 5 oil—.081 per gallon. Number 6 oil—.06143 per gallon.

#Number 5 oil.

*Equipped with night-set-back.

WALKER

INDUSTRIAL *Fuel-Saver* AUTOMATIC DRAFT REGULATORS

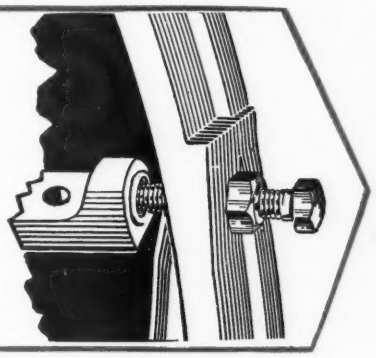
Are Chosen for

The Nation's Largest Housing Project!

Read Story on Page 98

Accurate Automatic Operation

is assured by Ball Bearing Hinge. Note heavy suspension bracket, machined pivot, Ball Bearing retainer.



MORE and more heating engineers are recommending Walker Type BB Commercial and Industrial Automatic Draft Regulators . . . for 5 to 20 per cent actual savings in fuel consumption.

Already the largest Walker controls made have proven themselves in thousands of installations in schools . . . office buildings . . . apartments . . . theaters . . . stores . . . city and county buildings . . . laundries . . . garages . . . manufacturing plants . . . housing projects.

Now the great Fairlington Housing Project may be added to the long list of successful Walker applications. Read the news story, with its mention of Walker controls, in this issue.

Here's just one more reason why Walker Type BB has earned fame for rugged construction . . . reliable operation . . . delicate but foolproof adjustment. Sizes of this model range from 16″ to 48″. Larger sizes are available on special order. For full particulars, write to . . .

WALKER MANUFACTURING & SALES CORP.

1756 PENN STREET ST. JOSEPH, MISSOURI

TYPE 34Z . . . for space-heaters . . . water heaters . . . cabinet-type heaters.

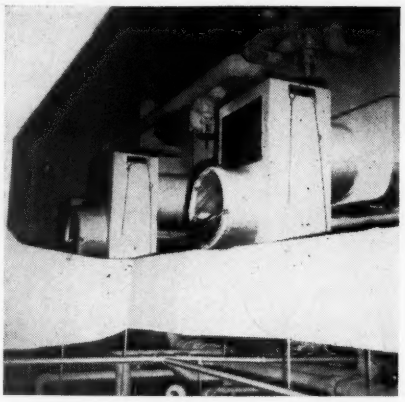
TYPE 34C—DOMESTIC . . . for furnaces . . . boilers . . . winter air-conditioners — stoker and oil fired.

TYPE 34B . . . for circulators . . . water heaters . . . trailer stoves . . . magazine stoves.

NEW WALKER VENTURI-TOP CHIMNEY CAP . . . a quality device to be specified for the 9 out of 10 service calls traceable to insufficient draft. Also recommended for ventilating purposes.

six, two have sending and receiving radios. The use of the two-way radio cars has resulted in the more efficient use of service personnel and has had considerable effect in holding down the number of men required.

E. W. Tullar, Superintendent of Utilities at the project, is the man who is responsible for the technical functioning of all the equipment spread over the vast grounds. Originally chief engineer, and later promoted to the more responsible position of superintendent, Tullar has a marine engineer's background, having been in the marine service in an engineering capacity for over 8 years. He is completely sold on the idea of marine engineering experience because of its great practical emphasis and makes every effort to employ men who have had such a background.



Two *of the 84 Walker draft controls that were installed at Fairlington.*

An exterior view *of one of the twenty-one outside boiler plants.*

In the heating phase of his work, Tullar supervises the operation of the 34 heating plants with their 85 boilers and burners. There are two types of boiler plants. Twenty-one are outside boiler plants as shown in the illustration, and 13 are inside plants, that is, part of the garden apartment building itself. The 21 outside plants burn #6 oil and the inside plants burn #5. This is the fourth winter that the development has been fired by oil.

Consumption of oil for 1952 totaled 3,086,763 gallons. Of this 591,544 gallons were #5 and 2,495,219 were #6. Operational costs with oil, with no additional fuel saving equipment, ran a bit less than 10% of the cost with coal, coal costing about $230,000 per year and oil about $205,000. This year as a result of the installation of the night setbacks and draft controls

Table III

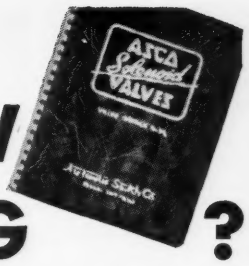
COMPARATIVE STATEMENT OF FUEL OIL CONSUMPTION

October, November, December 1951—October, November, December, 1952

Boiler House Number	*Year*	*Degree Days Oct.-Nov.-Dec.*	*Gallons Fuel Consumed Oct.-Nov.-Dec.*	*Average Gallons Per Degree Day*	*Average Gallons Saved Per Degree Day*	*Total Fuel Saved Oct.-Nov.-Dec. 1952*	*Approx. Cash Saving Oct.-Nov.-Dec. 1952*
1 South	1951	1503	54,863	36.5			
1 South	1952	1606	43,698	27.17	9.33	15,002	$ 921.57
2 South	1951	1503	29,994	19.96			
2 South	1952	1606	29,780	18.54	1.42	2,281	140.12
3 South	1951	1503	24,475	16.28			
3 South	1952	1606	21,961	13.67	2.61	4,192	257.51
4 South	1951	1503	31,536	20.98			
4 South	1952	1606	29,875	18.60	2.38	3,822	234.79
5 South	1951	1503	30,377	20.21			
5 South	1952	1606	31,492	19.61	.6	964	59.22
6 South	1951	1503	53,260	35.44			
6 South	1952	1606	48,358	30.11	5.33	8,560	525.84
7-A South	1951	1503	45,843	30.50			
7-A South	1952	1606	42,861	26.69	3.81	6,119	375.89
7-B South	1951	1503	43,520	28.96			
7-B South	1952	1606	36,924	22.99	5.97	9,588	588.99
8-A South	1951	1503	38,126	25.37			
8-A South	1952	1606	34,453	21.45	3.92	6,296	386.76
8-B South	1951	1503	30,042	19.99			
8-B South	1952	1606	30,898	19.23	.76	1,220	74.94
9 South	1951	1503	59,030	39.26			
9 South	1952	1606	54,407	33.88	5.38	8,640	530.76
10 South	1951	1503	51,180	34.05			
10 South	1952	1606	47,293	29.41	4.64	7,461	458.34
#11 South*	1951	1503	13,086	8.70			
#11 South*	1952	1606	10,528	6.55	2.15	3,453	279.69
#12-A South*	1951	1503	18,233	12.13			
#12-A South*	1952	1606	14,539	9.05	3.08	4,946	400.62
#12-B South*	1951	1503	12,317	8.19			
#12-B South*	1952	1606	11,315	7.04	1.15	1,850	149.85
#13 South*	1951	1503	11,810				
#13 South*	1952	1606	12,414	Night set-back not installed until December, 1952			
#14 South*	1951	1503	14,135	9.40			
#14 South*	1952	1606	13,005	8.10	1.30	2.088	169.13
					Total	86,482 gals.	$5,554.02

Rate used—Number 5 oil—.081 per gallon. Number 6 oil—.06143 per gallon.
#Number 5 oil.
**Equipped with night set-back.*

WANT THIS NEW CATALOG?



NEW ASCO CATALOG

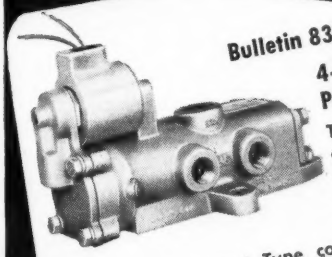
Describes Scores of Solenoid Valves

New Valve Catalog No. 24 brings you up-to-date on the extensive ASCO line of Solenoid Valves (list prices are included). New valves developed and put on the market recently are described in detail for the first time. A few of these are:

Bulletins 8262 and 8314
Midget Size
2 & 3-Way Packless Solenoid Valves

Midget Valves are now available with EXPLOSION-PROOF Solenoids for Class 1, Group D hazardous locations.

2-Way (Normally Open or Normally Closed) — Ports, 1/16" through 3/16"; pressures up to 1000 p.s.i. 3-Way — Ports, 3/64" and 3/32"; pressures up to 125 p.s.i. Time Delay Feature — Valves with 3½-6½ seconds delay also available.



Bulletin 8344
4-Way POPPET TYPE Packless Solenoid Valves

This valve has been thoroughly tested as a control unit in equipment requiring "plus" performance. Valve features:

Reliability — Poppet Type construction means this valve will not stick! Power stroke occurs in both directions — no spring return!

Fast Operation — 500 cycles/minute continuous duty; 750 cycles/minute intermittent duty (air).

Freedom in Mounting — Can be mounted in any position. Available 4 and 5 port; flow metering; standard or manifold mounting; ⅜, ½, ¾, and 1 inch pipe size. Handles air, water, or hydraulic oil; maximum pressure 250 p.s.i.

These two are just examples of new valve data. If you have any need for controlling the flow of liquids or gases in the equipment you are designing or operating, you should find this up-to-date ASCO Valve Catalog useful. Want a copy? Just drop us a note or call up and let us know. We'll be glad to send it to you . . . and extras for your associates if you desire.

ASCO Solenoid VALVES

We manufacture a complete line of Electromagnetic Controls including Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and complete Control Panels.

V.53.1

Automatic Switch Co.

385-F LAKESIDE AVENUE • ORANGE, NEW JERSEY

2 New Exclusive BUILT-IN Safety features now available on CFE DRAFT CONTROLS

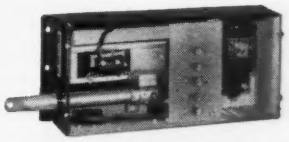
Closed and open view of CFE Damper Control.

● CLEVELAND *Sequence* DRAFT CONTROLS are providing dependable automatic, remote control of draft for thousands of industrial, commercial and institutional boilers. Their basic principle has been tried and proven — on most installations they pay for themselves out of fuel savings in less than one year.

Two important new CFE safety features are now offered as optional equipment *built into the control.* The first of these has up to now been partially obtainable only by installing separate remote equipment at higher cost. The second is a brand new device providing convenience and safety factors never before available.

1 LOW-DRAFT CUT-OFF This *Integral Minimum Draft Switch* shuts down firing on oil or gas boilers when draft falls below a predetermined unsafe limit. Instant and nuisance shutdowns due to momentary puffs are prevented by a time-delay relay. A signal light indicates momentary or sustained draft below the required minimum.

2 STARTING DRAFT SELECTOR This *Adjustable Start* feature provides a partial opening of the damper to assure the predetermined optimum draft for smooth, safe ignition — permitting purging of the boiler without an excessive draft condition that might pull pilot flame away or cause burner shut-down. When ignition is completed, damper control goes into the full range of automatic draft regulation. Recommended particularly for induced draft installations for oil or gas firing.



CFE Lectricarm Drive Unit with starting draft selector.

For complete information, use coupon

COMBUSTION INSTRUMENTS & CONTROLS — CLEVELAND FUEL EQUIPMENT CO. CLEVELAND OHIO — FOR EFFICIENCY AND ECONOMY

CLEVELAND FUEL EQUIPMENT COMPANY

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Please send me information on:

☐ CFE Integral Minimum Draft Switch for low-draft cut-off.
☐ CFE Adjustable Start feature for starting draft selection.

Name _____ *Title* _____

Company _____

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City _____ *State* _____

THE MOST COMPLETE AND DIVERSIFIED LINE OF NO. 6 FUEL OIL HEATERS

FULL RANGE OF SIZES IN ALL TYPES

Paracoil
HEAT TRANSFER EQUIPMENT

TUBULAR TYPE (Steam)

U-TUBE TYPE (Steam or Hot Water)

STRAIGHT TUBE TYPE (Steam)

TANK SUCTION BELL HEATER (Steam or Hot Water)

TANK SUCTION TYPE (Steam or Hot Water)

"PARAPROBE"* Fuel Oil Heater (For Below-The-Water-Line Service) — Guards against oil leaks and automatically shuts down oil burner and pump in event of oil heater failure. A positive protection against oil in the boiler.

TYPE "GF"* Indirect Gas Fired Fuel Oil Heater — Generates its own supply of steam for heating the oil! Applicable to any type of oil fired apparatus. A radically new development!

WRITE TODAY FOR BULLETINS AND PRICES!

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DAVIS ENGINEERING CORPORATION

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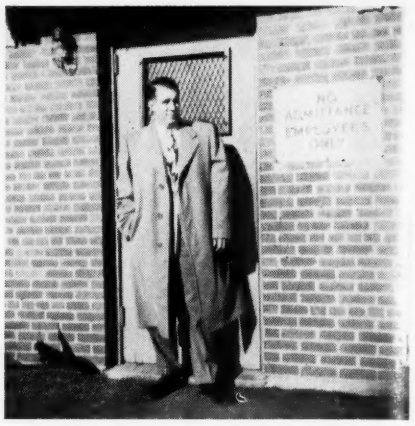


E. W. Tullar, *superintendent of the Fairlington development, was the man responsible for the installation of the draft controls and night setbacks.*

it is expected that the oil costs will fall to about $180,000 per year.

Back in January 1951, Tullar visited the ASHVE exposition in Philadelphia and noted the draft controls at the Walker booth and read their literature. He began to think seriously of using draft controls as a means of cutting costs and also decided to install a night setback device on all the jobs using #5 oil. He then sold his boss, M. G. Homan, Manager of Fairlington, on the deal and went ahead with the job in the summer of 1952.

As a result of his decision 85 draft controls, varying in diameter from 22 to 26 inches, were installed on the 85 boiler breechings. The maintenance force of Fairlington made the installations, along with other work, with a labor force of one welder and two helpers. It took them exactly six weeks to do the job. Tullar used the swinging gate and holding ring supplied by the manufacturer and had his men roll and weld the steel collars themselves.

After the draft controls were installed they were set with a draft gauge. A hole was bored as close as possible to the second banks of tubes and draft over the fire was adjusted to 0.05 inches of water and they are even trying "to get a tighter reading" to use Tullar's own words. The immediate effect of this was to drop the operating stack temperatures a considerable degree. Where previously they averaged 550° F. to 600° F. they now run about 375° to 400° F.

The night setbacks were also in-

stalled in those plants so marked in Tables 2 & 3. Actually, an additional control was added to the Johnson Duo-Stat system and a clock was installed to shift from the day to the night control and thereby reduce the temperature of the hot water circulating through the system. Thirty-five houses are completely equipped with the setback and in time all the plants will have this device.

The day and night sets of controls have a different differential and all the clock does is shift from one set of controls to the other. This in effect reduces the operating water temperature one half the difference of the number of degrees over one hundred degrees that the system is operating at during daytime hours. For example, if the hot water circulating through the system during the day is 180° the number of degrees the water temperature will be dropped that night will be 40° F. (½ the differential over 100° F.). The night setback splits the difference between the number of degrees of the day setting over 100° F.

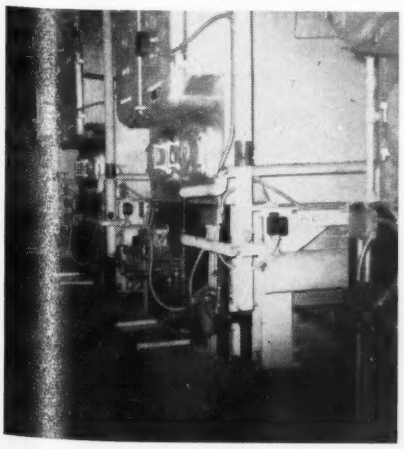
The installation costs were as follows:

Damper controls	$1,744.84
Night setbacks	8,050.00
Total cost	$9,794.84

Approximate savings in fuel for the October, November and December '52 period were:

#5 oil	$3,256.38
#6 oil	8,587.84
Total savings	$11,844.20

Note that the savings for the three



A typical *Fairlington boiler room.*

View of service department at Ray Heat & Power Company, Chicago, Illinois.

available through RAY DEALERS everywhere

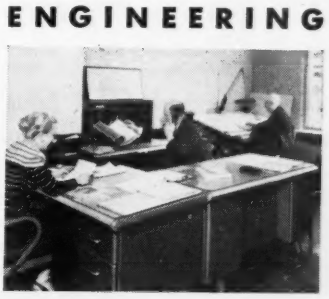
complete Factory-Certified parts and SERVICE for EVERY RAY BURNER

IN YOUR OWN AREA, wherever you are, your local Ray Dealer is staffed and equipped to:

- ✓ Supply full engineering data on the *right* Ray Burner for every job, whether it calls for an Oil, Gas or Gas and Oil combination.
- ✓ Install each Ray Burner according to specifications.
- ✓ Maintain each Ray Burner at top operating efficiency.

Each Ray Dealer forms a link in the far-flung network that has been forged to assure maximum satisfaction from every Ray Burner installation. Whenever you have a heating problem, call your Ray Dealer *first*. You'll find the listing in the "yellow pages" of your local telephone directory.

RAY DEALER ENGINEERING



Skilled engineering staffs like this one are available for Ray customers through Ray dealers everywhere.

RAY OIL BURNER CO.

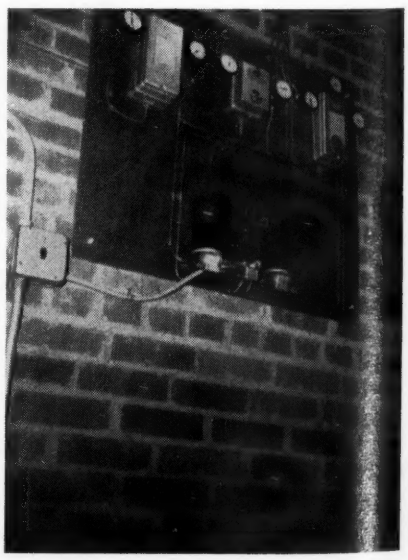
Since 1872

1301 San Jose Avenue • San Francisco 12, California
Atlantic Seaboard Div. • 629 Grove St., Jersey City 2, N.J.

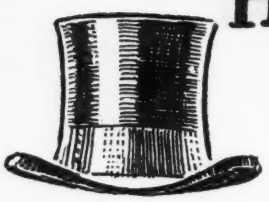
months' period exceeded the cost of the additional equipment and proved the value of the investment.

Table I gives a comparative statement of fueloil consumption for January 1952 and January 1953 for specific boiler houses. This single month comparison is especially significant. By curious coincidence, both months in the two separate years had the same number of degree days, 747, for the Fairlington, Virginia, area. This provided an exact basis for comparing the plant's performances with and without the draft controls. All were equipped with the draft controls and those plants burning #5 oil were in addition equipped with the night set-back.

The figures show the monthly reduction in fuel consumption for each of the listed boiler houses in the actual number of gallons of oil. Note that although the amount of oil saved in each case varies, there is a saving on every plant listed in the table. Some show economy as a result of the draft control installation. These are boiler house #1 on the south side, with a reduction in consumption of 5123 gallons of #6 oil for the month in question; boiler house #4 (north side) with a savings of 3535 gallons of #6; boiler house #6 (north side) and boiler house #9 (north side) with a reduction in consumption of 5043

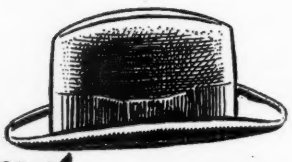


A view *of one of the control panels incorporating the night set-back clock with the Johnson Duo-Stat control system.*



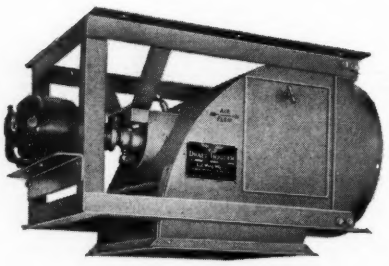
High Hats are out of date

now— it's the Homburg



High Chimneys, too, are out of date

now— it's the WING DRAFT INDUCER

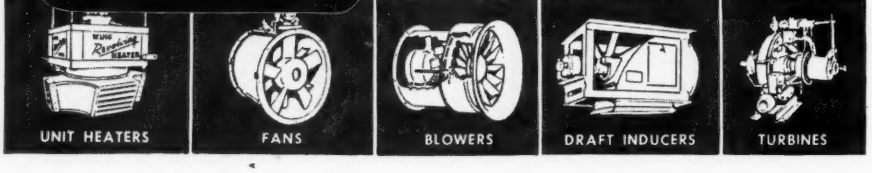


Why? Because your heating plant can have positive, adequate, uniform draft without the need for tall, unsightly, expensive stacks. Unlike variable chimney draft, the Wing Draft Inducer gives perfect motorized draft in any weather. It cuts fuel costs by giving higher CO_2's. Smoking is reduced or eliminated. The capacity of your boiler plant is increased.

Write for a copy of Bulletin I-52

Wing

L. J. Wing Mfg. Co.
66 Vreeland Mills Road
Linden, New Jersey
Factories:
Linden, N.J. and Montreal, Canada



gallons and 3614 of #6 oil, respectively.

Total savings for all boiler houses for the comparable periods for #5 oil was 13,740 gallons equal to $1,091.07 and for #6 was 44,046 gallons, worth $2,705.75. Total gallonage savings for the plants listed in the table was 57,516 with a dollar value of $3,796.82, for the month of January.

Tables 2 and 3 show the savings for the three months' period, separately itemized for the North and South sections of the development. The figures are especially significant inasmuch as there are approximately 6% more degree days in 1952 for the months under consideration as there were for the same time in 1951.

The total fuel savings for the development were:

	Gals.	
North Division .	93,517	$ 6,290.18
South Division .	86,482	5,554.02
Total	179,999	$11,844.20

Some of the boiler houses showed really impressive reductions; No. 6 North, 14,133 gals. with a dollar value of $868.19 and No. 1 South, 15,002 gallons for a savings of $921.57. The savings on these two plants alone ($1,789.76) exceeded the cost of installing the draft controls on the entire 84 boilers, which cost was $1,744.84.

❖

Swagelok has Catalog on its tube Fittings

COMPLETE INFORMATION on Swagelok tube fittings is available in a 16-page catalogue, No. B-152-A, put out by the Crawford Fitting Co., Cleveland 10, Ohio. The publication explains how the Swagelok fitting functions and covers the problem of corrosion in process piping and instrumentation lines. It also gives information on the numbering system used for ordering.

Over twenty distinct types of fittings are listed, all in many different sizes. These include nuts, ferrules, male and female connectors, unions, elbows, elbow unions, tees, reducers, adapters, plugs, caps and valves. The catalog also lists Swagelok distributors and the addresses of their offices throughout the country.

SUPERIOR
combination GAS/OIL burners

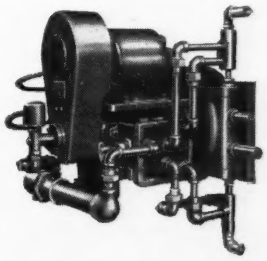
With the growing distribution of natural gas, has come an increasing demand for combination gas/oil burners.

Dealers who handle Superior combination gas/oil burners are in an ideal position to meet this demand.

The Superior Gas Burner consists of a circular row of stainless steel nozzles set in a cast-iron gas manifold ring. The angle of the nozzles shapes the fire to the firebox. Combined with the Superior Oil Burner, the same fan supplies primary air for firing either gas or oil. For safety, a *constant* gas pilot guards every gas-firing cycle.

Whatever the fuel . . . light or heavy oil, natural, manufactured, propane or butane gas . . . Superior Combination Burners will burn it Safely, Efficiently, Economically, and Automatically. Change-over from one fuel to the other is made in a matter of minutes without interruption of steam supply, and without disturbing or making any change in the equipment.

Valuable, unassigned territories are still available. If you have the experience and the organization to successfully handle sales and installation, write for complete details.



Shown here is the other side of the SUPERIOR Rotary Burner with its 4-hole hinge, V-belt drive, dual pumps and reservoir.

for performance you can **BANK** *on*

SUPERIOR COMBUSTION INDUSTRIES INC.
TIMES TOWER, TIMES SQUARE, NEW YORK 36, N.Y.

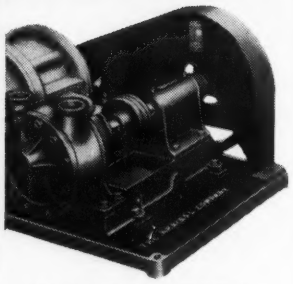
SUPERIOR ROTARY BURNERS

• SINCE 1926 •
in the application, design and manufacture of pumps—separators—hydraulic accessories.

KRAISSL

PUMPS and SEPARATORS for industrial oil burner service

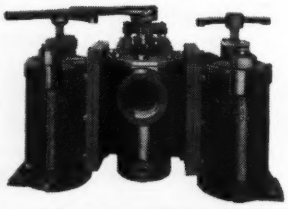
• direct burner service • booster service on pump type burners • simplex and duplex • standard and high pressure •



Class 60 PUMPS

Of the internal gear type, the "60" is machined to close tolerances—for maximum vacuum characteristics with heavy and cold oil. The outstanding design advantage is the ball bearing, V-belt reduction drive-connected to pump by means of loose coupling, which eliminates side deflection from pump shaft. Suction and discharge sizes from ½" to 2". Capacities, 75 to 2100 GPH; pressures to 100 psi.

Write for Bulletin A-1193



SEPARATORS

Adequate strainers for both suction and discharge service are essential on every heavy oil installation. Available with Underwriters Labels from ¼" to 4"; larger sizes up to 6".

Advantages of our design are: ease of cleaning; interchangeability of separator baskets — from coarse straining to fine filtration; elimination of replacement filter costs—cleaning of removable separator baskets restores original efficiency.

Ask for Bulletin A-1430

KRAISSL KRAISSL CO Inc.

295 Williams Ave.
Hackensack, N. J.

COMMERCIAL & INDUSTRIAL oilburning

OHI reports Shipments of commercial Oilburners

DURING JANUARY reports of 51 manufacturers to the Oil-Heat Institute of America indicated a total of 2,829 commercial-industrial oilburners were shipped, compared with a total of 2,448 burners reported by

Commercial-Industrial Oilburner Shipments*

1952 DISTRIBUTION BY STATES

	Total	Horiz. Rotary	Gun	Residual	Distillate	Low Press. Gun	High Press. Gun
NEW ENGLAND							
Maine	554	195	322	304	249	325	226
New Hampshire	315	110	183	173	141	184	131
Vermont	97	34	56	53	43	59	40
Massachusetts	3,637	1,281	2,120	2,000	1,636	2,134	1,503
Rhode Island	206	72	120	113	92	120	86
Connecticut	1,636	576	953	899	736	960	676
MID-ATLANTIC							
New York	7,114	2,506	4,147	3,912	320	4,174	2,940
New Jersey	1,760	620	1,026	968	792	1,032	728
Pennsylvania	4,767	1,679	2,779	2,071	2,145	2,797	1,970
Delaware	76	26	44	41	34	44	32
Maryland	1,025	361	597	563	461	601	424
District of Columbia	424	149	247	233	190	243	181
SOUTH ATLANTIC							
Virginia	234	82	136	128	105	137	97
West Virginia	36	12	20	20	16	21	15
North Carolina	138	43	80	76	62	81	57
South Carolina	95	33	55	52	42	56	39
Georgia	106	37	61	58	47	62	44
Florida	149	52	86	81	67	87	62
MID-WEST							
Michigan	803	282	468	441	361	471	332
Ohio	526	185	306	289	236	308	218
Indiana	1,208	425	704	664	543	208	500
Illinois	1,640	577	956	902	738	962	678
Wisconsin	880	310	513	484	396	519	363
Minnesota	448	157	261	246	201	262	186
Iowa	1,226	432	714	674	583	719	507
Missouri	699	246	407	384	314	410	489
Kansas	68	23	39	37	30	39	29
Nebraska	51	17	29	28	22	30	21
South Dakota	20	7	11	11	9	11	9
North Dakota	14	5	8	8	6	8	6
SOUTH CENTRAL							
Kentucky	31	10	18	17	13	18	13
Tennessee	61	20	35	33	27	35	26
Alabama	62	21	36	34	28	36	26
Mississippi	15	5	8	8	7	9	6
Arkansas	—	—	—	—	—	—	—
Louisiana	44	15	25	24	19	25	19
Oklahoma	91	32	53	50	40	53	38
Texas	75	26	43	41	33	44	31
MOUNTAIN STATES							
Montana	28	9	16	15	12	16	12
Idaho	17	6	10	9	7	10	7
Wyoming	—	—	—	—	—	—	—
Colorado	56	19	32	30	25	32	24
Utah	57	19	32	31	25	33	24
Nevada	13	4	7	7	5	7	6
New Mexico	7	3	4	4	3	4	3
Arizona	12	4	7	7	5	7	5
WEST COAST							
Washington	1,869	657	1,089	1,027	462	1,096	773
Oregon	1,611	567	939	886	398	945	666
California	1,964	1,044	1,728	1,632	734	1,739	1,225

*Compiled by Oil-Heat Institute of America, Inc.

50 manufacturers in January 1952. January shipments for both years for oil fuel only were divided as follows:

	January 1952	*January 1951*
HORIZONTAL ROTARY CUP		
2½ gph and under	458	76
Over 2½ to 8	7	24
Over 8 to 30	265	188
Over 30 to 100	223	216
Over 100	24	24
Total	977	618
HIGH AND LOW PRESSURE GUN		
Over 5 to 30 gph	1,580	1,575
Over 30	46	46
Total	1,626	1,626
MECHANICAL AND STEAM ATOMIZING		
30 gph and over	43	79
Grand total	2,646	2,350

Included in the 2,829 shipped during January 1953 were 183 burners for use with oil and gas, of which 77 were horizontal rotary cup, 105 were high pressure and low pressure gun and 1 was of the mechanical and steam atomizing type. The 98 oil and gas burners shipped during January 1952 by reporting manufacturers were divided: 57, horizontal rotary cup; 20, high and low pressure gun and 21, mechanical and steam atomizing.

Since compiling yearly totals, D. H. Bottrill, technical secretary of the Institute, points out that additional statistical information has been received which permitted the preparation of a state breakdown of shipments in 1952.

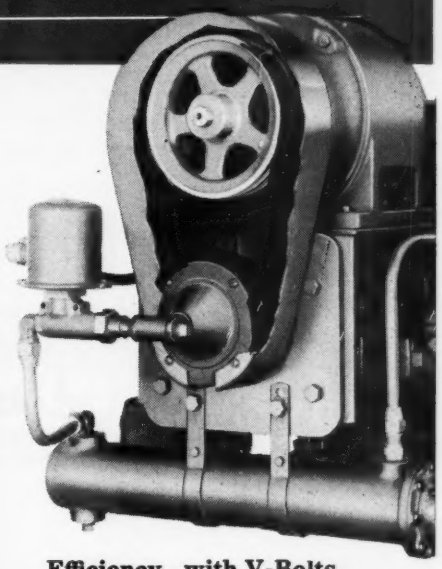
Sectional Distribution

Based on information furnished by participating manufacturers, an indicated total of 36,965 shipments was arrived at for 1952, divided sectionally as follows: New England, 6,445 burners, 17.4% of total; Mid-Atlantic, 15,166 burners, 41.0% of total; South Atlantic, 758 burners, 2.1% of total; Mid-West, 7,583 burners, 20.5% of total; South Central, 379 burners, 1.0% of total; Mountain States, 190 burners, 0.6% of total and West Coast, 6,444 burners, 17.4% of total.

The accompanying table shows distribution of these burners by states, broken down into these categories: Horizontal rotary, gun, residual oilburners, distillate oilburners, low pressure gun and high pressure gun.

DEVELOPMENT REPORT

V-Belt Drive—standard on all Enterprise Burners for easy, low-cost motor change and maintenance



WHY ENTERPRISE USES V-BELT DRIVE EXCLUSIVELY!

- Enterprise pioneered V-Belt Horizontal Rotary Oil Burners. Both direct drive and V-Belt were produced for several years.
- In 1938 an extensive survey of both distributors and users indicated an almost universal preference for V-Belt drive.
- For 14 years V-Belt drive has been used *exclusively* on all Enterprise Oil and Combination Oil-Gas Burners... for these reasons—

Enterprise Burner capacities range from 4 to 200 gallons per hour, 12 to 650 boiler hp.

Efficiency—with V-Belts
Any desired operating speed can be provided to produce fine atomization of any type of fuel. Direct drive burners have only one speed.

Flexibility—with V-Belts
The capacity of Enterprise Burners can be increased or decreased simply by changing motor size and sheaves. Extra capacity in direct drive burners can only be obtained in a larger burner size.

Economy—with V-Belts
Standard motors (1) incorporate the most efficient design and construction; (2) are available throughout the world; (3) cost less than component parts of special direct drive motors; (4) require less time to replace, thereby reducing replacement cost.

It will pay you to look at this and other features that make ENTERPRIZE the *Quality Line* of Horizontal Rotary Oil Burners! Write today for full information.

ENTERPRISE ENGINE & MACHINERY CO.
A Subsidiary of General Metals Corporation
18th and Florida Sts., San Francisco 10, California

Enterprise DEPENDABLE Oil Burners

The Choice of Heating Experts

Readers' Problems

Q. Have you any data on how much fuel can be saved by switching to fully modulated firing of industrial, high-pressure-steam boilers, from horizontal rotary cup burner operation which is on-off except that it provides the low-fire start feature?

I, of course, know that fully automatic firing is more efficient and in addition reduces maintenance on firebrick, burner heads, etc. Several installations in our area I have in mind are burning No. 6 oil and provide on-off firing at one gph rate—except for their low-fire start feature. The firebrick, steel rings, and air cones around the burner heads burn out in less than two years. Our sales arguments for fully modulated firing will be much stronger, if we can indicate the fuel savings that will come of switching from on-off firing to fully modulated firing.

C. H. C. N., Watertown, N. Y.

A. We regret that we have no data on how much fuel can be saved by switching from on-off firing to fully modulated firing. We do not have theoretical figures or case history data from actual installations. The fuel savings produced by the improvement you describe would be greatly different on different installations, for it would depend on the details of the installations. One important factor is the ratio of "on" time to "off" time—for peak loads and for loads that account for most of the fuel consumption. The length of the "on" time is important also; modulated firing will save more fuel where an on-off burner ran but five minutes at a time, than where the on-off burner ran 40 or 50 minutes at a time.

It would not be surprising if the switch to modulated firing reduced the oil consumption 20% on some installations, but reduced it only 5% or even less on other installations.

Modernizing Jobs

Consider offering modernization jobs to owners of largest boiler plants. The package you offer might include such things as:

1. Complete rebuilding of oilburners, oil pumps, etc.; and a one-year service guarantee the same as for a new installation.

2. Modern safety controls; latest-type combustion controls, low-water controls, automatic water feeder equipment, etc.

3. Sequence-type over-fire draft control equipment. Such equipment is badly needed for industrial boilers, and can save much fueloil. Yet few oil-fired boilers now have it.

4. Draft inducers for the many boilers needing them.

5. Modern instrumentation—a complete set-up of the modern instruments that save fuel by reporting CO_2,

GUARD Against Leaking Oil Tubes
End CONTAMINATING OF BOILERS AND HEATING SYSTEMS

Approved by THE NEW YORK CITY BOARD OF STANDARDS AND APPEALS NO. 425-51-SA

with the ALSTROM "SAFE GUARD" OIL PREHEATER

• completely "fuel-proof!"
• really heats oil!

... suitable for both suction side and pressure side hook-up

This "Safe Guard" Double Transfer Unit gives uniform heating at correct temperatures, with maximum efficiency and provides absolute protection.

• compact • ruggedly constructed • beautiful finish
• triple tested • Visual Indicator, standard on all models

Every "Safe Guard" Oil Preheater is equipped with necessary connections for either below-water-line installation or *Vacuumatic installation.

THE ALSTROM CORPORATION
790 EAST 176 STREET · NEW YORK 60, N.Y. · CY 9-2310

Manufacturers of: THE FAMOUS *VACUUMATIC TANKLESS • CAST IRON TANKLESS • DOUBLE TRANSFER OIL PREHEATERS • SUBMERGED COILS FOR EVERY PURPOSE • INDUSTRIAL HEAT EXCHANGERS

*Reg. U.S. Pat. Off.

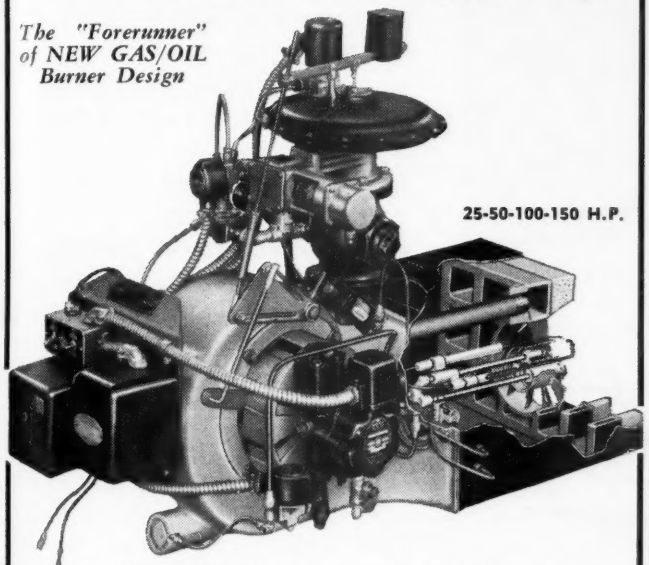
A Distinguished

Dual Fuel Burner

Built On

The *Entrained Combustion* Principle

The "Forerunner" of NEW GAS/OIL Burner Design



25-50-100-150 H.P.

Presenting the (MGO-3-D3) fully automatic, mechanical draft combination GAS & OIL BURNER. Designed to fill the trend and need of the Gas Industry, employing the ENTRAINED COMBUSTION PRINCIPLE of low gas pressure combined with oil in a revolutionary manner. Obviously, METTLER LEADERSHIP is again demonstrated with this design. Nothing else like it on the market.

Write for BULLETIN No. 12-S

The METTLER CO. Inc.

4366 WORTH ST. LOS ANGELES 63, CALIF.

Rely on . . . **PREFERRED DRAFT-A-JUSTORS**

— for stabilizing DRAFT CONDITIONS!

More than 1,000,000 installations prove Preferred does a better job on all types of fuel. The Draft-A-Justor is completely automatic and keeps a uniform pull on the fire box even when outside weather conditions increase the draft beyond desired amount. Easy to set, quick to install . . . its' adjustable features make the Draft-A-Justor a fast selling item.

Available in three sizes to meet the needs of any job from 5" to 13" smoke pipes. Write for details today.

Also available—data on commercial and industrial sizes.

PREFERRED UTILITIES MFG. CORP.

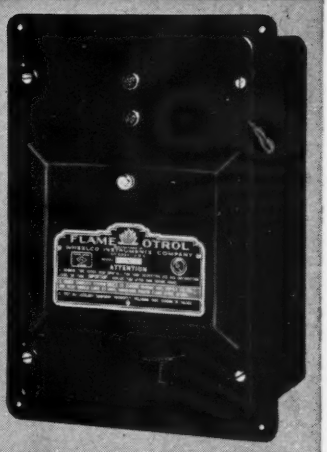
1860 BROADWAY · NEW YORK 23, N. Y.

017

ACCEPTED

COMBUSTION SAFEGUARD for oil fired equipment

APPROVED BY
ASSOCIATED FACTORY MUTUAL LABORATORIES AND UNDERWRITERS' LABORATORIES



wheelco FLAME-OTROL

Specify the combustion safeguard accepted and recommended by safety engineers for positive and dependable protection against explosion hazards. Individual combustion safeguard problems can be met by merely inserting a Flame-otrol plug-in unit into the receptacles of the base model.

TYPICAL APPLICATIONS

Core Ovens
Ovens Processing Volatile Materials
Continuous Drying Ovens
Heat Treating Furnaces
Glass Melting Units

NATION-WIDE ENGINEERING AND SALES OFFICES

BARBER COLMAN — Instrumentality

wheelco instruments division

BARBER-COLMAN COMPANY

1247 ROCK ST. • ROCKFORD, ILLINOIS, U.S.A.

smoke, stack temperature, draft at different points, etc. Recorders may be needed.

6. Large-building heat control equipment of the latest type, to substitute automatic heat control for the manual heat control found in many of the older installations.

7. New fireboxes of best design, material, and construction.

Doing a thorough job will produce maximum fuel savings. If you improve just one aspect of an old installation, the remaining shortcomings of the job can prevent your one improvement from producing any fuel savings. A thorough job of modernization and improvement can cut the oil consumption of many jobs by as much as 40%.

Q. I service burners in many big apartment houses. Slugs of water stay in radiator vent valves, a superintendent complains to me. Is it good practice to tell apartment occupants to remove vents and shake water out of them when radiators stay cold? Seems effective. But why necessary?

E. K. H., Brooklyn, N. Y.

A. It should not be necessary if: (1) boiler gives reasonably-dry steam, (2) steam mains are properly drained of condensate, thus are free of slugs of water, (3) vent valves are fairly new, are in good condition, (4) vent valves are screwed far enough into the radiators.

Have the super buy a few dozen new vent valves of your favorite make and model. He should install these in certain apartments and find out for himself if they also need frequent shaking.

Q. Where one chimney serves a big heating boiler and a little water heater, I can (a) install a big draft regulator on chimney itself, provide smokepipe draft of about .08" for both smokepipes, or (b) at much lower cost, install a good smokepipe draft control for each boiler. Chimney draft excellent, both smokepipes long, one 10 ft. and other 22 ft. Is (a) better than (b)?

T. D. R., Wernersville, Pa.

A. Most draft-control experts would, we believe, find your (b) method of draft control much better. It permits you to provide the proper over-fire draft for each boiler. The .08" smokepipe draft may not be optimum for each boiler.

Q. Please compare use of some natural draft on a horizontal rotary cup burner with 100% freedom from depending on chimney draft, gained by using either a forced-draft blower for secondary air, or a draft inducer. Isn't freedom from depending on natural draft better and worth more to a burner owner? How much fuel does it save on an average installation?

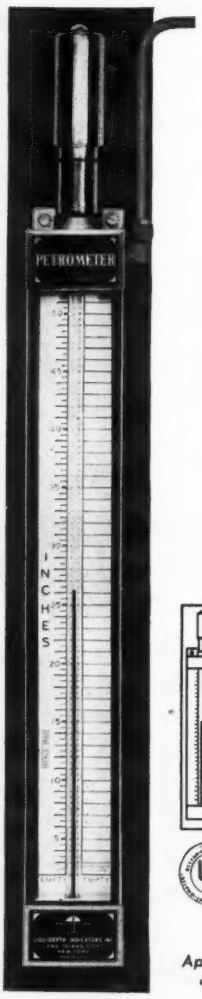
H. A. I., Black River Falls, Wis.

A. In general, freedom from depending on natural draft is undoubtedly better. It is worth much to a burner owner. But the fuel savings it gains would be greatly different on different installations. It could be as high as

(Please turn to page 184)

LIQUIDEPTH INDICATORS

Accurate!



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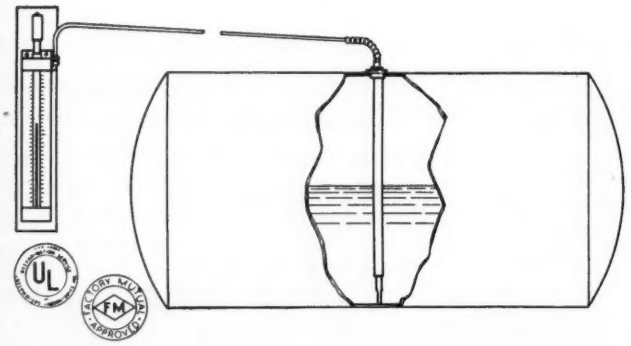
Distant reading

TANK GAUGES

Simple, easy to install, Petrometer puts the finishing touch on your industrial and domestic fuel oil installations wherever correct remote reading gauges are desirable. Can be located anywhere . . . above or below the tank, a few feet or a quarter of a mile away. Petrometer is constant reading. Scales are easily adjustable to correct for tank pitch, etc. Full year guarantee. For tanks 20 inches to 50 feet deep. Ask today for Bulletin PF.



Approved by Board of Standards and Appeals

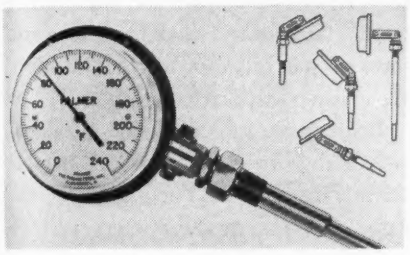
LIQUIDEPTH INDICATORS, INC.

43-22 TENTH ST., LONG ISLAND CITY 1, N. Y.

Palmer dial Thermometers available in three Types

PALMER mercury-actuated, dial thermometers are fully compensated by Invar Compensation, guaranteed accurate 1 scale division, and are available in three types. The thermometers can be adjusted to the most readable position at any angle desired, by positioning the stem and rotating the case.

One type is a rigid stem dial thermometer that is interchangeable with



standard industrial thermometer separable socket; a second type is wall-mounted with flexible connecting armor; the third style is flush-mounted for panel mounting. Each type has 11" of scale reading dial face and bold black numbers for better than average readability. Details are contained in Palmer Bulletin 50-128.

Made by: Palmer Thermometers, Inc., 2515 Norwood Ave., Cincinnati 12, Ohio.

❖

Continental Boilers discussed in Catalog

A CATALOG, prepared by Boiler Engineering & Supply Co., Phoenixville, Pa., describes its line of Continental Automatic Boilers. The 4-page, illustrated booklet contains detailed engineering data and specifications and discusses the boilers' features.

They range in size from 20 to 500 hp and are recommended for use wherever steam is required for applications other than power. Major uses are for heating and as a source of steam for process industries. Two-pass design is incorporated into these units to eliminate the need for baffles, while clean-out and inspection doors, located on both ends of the boilers, are hinged so that they can be opened in 30 minutes. The only refractory used lines the removable front and rear covers.

Continental models are offered for firing with light or heavy fueloil, manufactured or natural gas.

for better business...

let's talk

BETTER EQUIPMENT!

and better equipment means —

QUICK, SIMPLE INSTALLATION — designed for heavy duty and ruggedly constructed, Preferred's Heavy-Oil Burner is delivered to you completely assembled, internally wired and pressure tested, ready for service line hook-up and operation, thereby saving installation time and expense. Simple control settings make possible firing adjustments quickly. No extra fittings, fussing, or fixing when you install Preferred.

— Preferred's extra long air nozzle makes installation under deep boiler water legs and combustion chamber arches not only easy but also allows self-supporting, *thicker* front walls in combustion chambers. As a result, your customers get longer refractory life, better front insulation and *you* get better-satisfied customers with less service calls.

Only Preferred can give you *all* these features to make *your selling easier* and *your profits surer* —

"Voluvalve" Fuel Regulator; High Speed Atomization; Precision Air-Oil Control; Dual-Pump Reservoir; Sure-Fire Ignition and* it's *Completely Wired Internally* and *Special Long Nozzle.

FOR COMPLETE DETAILS WRITE FOR BULLETIN 175-E.

021

PREFERRED UTILITIES MFG. CORP.

1860 BROADWAY · NEW YORK 23, N.Y.

Everyday Snags

Flame leaves atomizing Cup

A question about using continuous ignition for horizontal rotary burners appeared on page 112 of the February issue of FUELOIL & OIL HEAT. Serviceman A. H. T., Boston, pointed out that he uses continuous ignition to cure the flame-leaving troubles of pressure burners. New at servicing horizontal rotaries using Nos. 5 and 6 oils, he wonders why continuous ignition is not used usually to cure flame-leaving troubles of such burners.

The amount of gas involved is a big factor, was the answer given him. Using continuous ignition for a rotary burner having the usual gas-electric ignition system, he would run up the owner's gas bills considerably!

Whether or not that question-and-answer received the attention of serviceman R. B., Jamaica, N. Y., is not known, but R. B. soon sent FUELOIL & OIL HEAT his problem on the same topic of continuous ignition for big burners. Here's what he wrote:

"For five years this rotary-cup burner with intermittent gas-electric ignition ran properly. Now we run into a new trouble. Flame leaves the cup.

"After trying all possible adjustments, we find it impossible to hold flame at the cup. But when we switch to constant ignition, the fire is very good—flame starts near the cup—and owner's gas bills are terrifically high! Please help solve this condition."

Insufficient rate of flame propagation is the direct cause of the trouble on this installation. For five years, the rate of flame propagation was high enough to cause the flame to start burning near the cup after the gas pilot was turned off by the controls. Now this rate of propagation has dropped off. For some reason, it has become insufficient. The direct approach to curing the trouble lies in finding the reason, then offsetting it by the proper remedy.

Remedial Steps

The general remedies for this trouble include: Eliminate oilburner defects that are causing poor atomization; replace an atomizing cup which is nicked or out-of-round or which does not run true; clean thoroughly or replace the air snoot that houses the atomizing cup: clean any plugged primary-air channels, and clean a plugged primary-air blower. Improve the atomization by raising to a higher temperature the oil that flows to the atomizing cup. Increase the temperatures of the flame and firebox through use of any steps that give decidedly higher temperatures. These steps often include such things as: Eliminating defects or deterioration of an old firebox; installing an entirely new firebox designed especially for rapid heating following a cold start, and high-temperature normal operation. Provide a large "ignition arch" over the front part of the firebox, as many big-burner experts expect flame-leaving trouble as the result of omitting such an arch. Consider providing wing walls close to the flame at the front of the box. But be sure you don't wind up with "stray oil" hitting

Get **DOUBLE* PROTECTION**

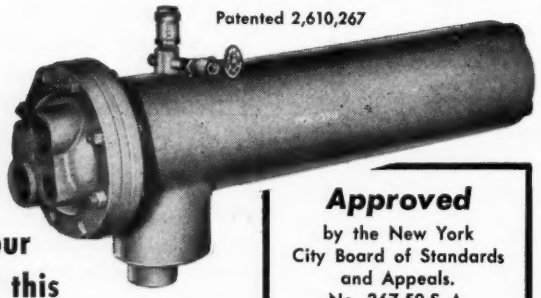
with... *Yula-trol*
FUEL OIL DETECTOR

and... *Yula* "YT"
"U" TUBE FUEL OIL HEATER

The *Yula-trol* is connected with a "probe" in the shell of the fuel oil pre-heater. Should the water be displaced from contact with the "probe" by oil or air, the *Yula-trol* instantly shuts off the heating unit and sounds an alarm.

The *Yula* "YT" "U" Tube Heater is designed to pre-heat No. 6 (Bunker "C") fuel oil efficiently and economically by use of hot water as the heating medium.

Patented 2,610,267



Approved by the New York City Board of Standards and Appeals. No. 367-50-S. A.

This outstanding *Yula* combination assures your oil burner installations this vital protection . . .

* **By simultaneously shutting off the heating unit, sounding an alarm and flashing on a red light in case an oil leak occurs in the pre-heater.**
* **By acting as a Low Water Cut-off.**

RESULT: Positive heating system protection at low cost.

Like all *Yula* equipment, the Yula-trol and Yula "YT" "U" Tube Heaters provide the maximum in efficient, economical operation at lowest possible cost. Get *Yula* efficiency . . . get *Yula* "Double Protection"

Other *Yula* Products

- **Yula Straight Tube Fuel Oil Heaters**
- **Yula Suction Oil Heaters**
- **Yula Bayonet Type Oil Heaters**
- **Yula Type SS Conventional Heaters**

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WRITE . . . DEPT. FO-12

YULA WATER HEATERS, INC.
166 WEST 225th STREET, NEW YORK 63, N. Y.

NATIONAL AIROIL
FUEL OIL - GAS
BURNERS
SERVING INDUSTRY FOR 41 YEARS

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- Tandem Block Combustion Units
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- Valves, Strainers, Furnace Windows

Detailed information gladly sent you upon request.

Automatic Oil Burners for Homes, Churches, Apartment Houses, Factory Buildings and Office Buildings.

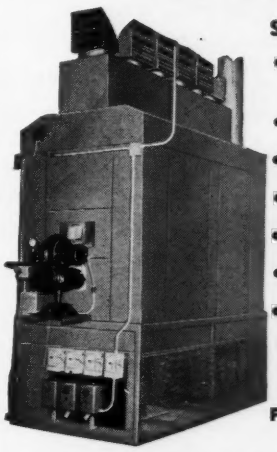
Established 1912 — Incorporated 1917

NATIONAL AIROIL BURNER COMPANY, INC.
1306 East Sedgley Ave., Philadelphia 34, Pa.
Southwestern Division: 2512 So. Blvd., Houston 6, Tex.

refractory material too close to the flame at the front of the firebox, as that would result in great trouble related to building up carbon! Adjusting for a larger or richer fire often helps. Eliminate air leaks in the boiler and firebox, introduce the secondary air carefully, regulate the over-fire draft properly—in fact, take every step needed to arrive at CO_2 readings above 10% with no chimney smoke.

This trouble often results from switching to fueloil more difficult to atomize and ignite. That's important to you, for the owner can not blame poor service work and poor condition of the equipment you are supposed to service well, if this new trouble really is caused by his buying heavier oil this season than he bought previously. He may be receiving heavier oil without being aware of a switch in the oil; the oil he bought previously may have been much lighter than the heaviest oil that can pass as No. 5 oil, whereas now he may be getting oil as heavy as No. 5 oil can be. If that's the situation, he may now need heating of the cup-line oil though previously he did not need

ARTCRAFT
Direct Fired
SPACE HEATERS
THE MOST MODERN, ECONOMICAL AND FLEXIBLE METHOD OF HEATING LARGE AREAS



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- INDUSTRIAL BUILDINGS
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- SCHOOLS
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FIRED WITH GAS OR OIL

Capacities: 200,000-2,000,000 B.T.U.
(Also Suspended Furnaces, 75,000-750,000 B.T.U.)
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Specialty salesmanship in our day with emphasis on burner selling by W. A. Matheson of Eureka Williams Corp., long a leading figure in the Heating Industry. Blue Cloth Binding, 6 x 9, 260 pages. Price $4.00.

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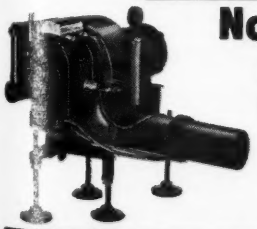
★ RAYFIELD ★
AUTOMATIC
No. 5 OIL BURNERS
REDUCE HEATING COSTS... INCREASE YOUR PROFITS



Burn No. 5 heavy fuel oil. Self-contained, all electric. Self-lubricating. Many new exclusive features. Write for full details.
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PERSISTENT PROFITS and GOOD-WILL EXPANSION with an Exclusive Franchise on

Instant Acting SABANOL
THE HOMOGENIZING FUEL OIL TREATMENT

the foremost fuel oil treatment, eliminating sludge problems and providing maximum burnability of all grades of fuel oil.

"We have used SABANOL in customers' fuel oil tanks, and have spot checked them with very good results.

"WE NOW WANT TO USE SABANOL exclusively in our fuel oil, and would like to know if we can have exclusive rights in our territory."

CONTAINS AN EXCLUSIVE SOOT RETARDANT AND RUST INHIBITOR

Here is a product that consistently outperforms the promise. It is backed by a company active since 1926. SABANOL contains no chlorinated solvents. Picks up water due to condensation; guaranteed absolutely harmless to personnel and equipment.

Write Today as to territory availability. Learn how and why progressive fuel oil dealers are making money with the Exclusive SABANOL Franchise. Also, we have certain other related products which might fit in unusually well with your activities.

POCKET SIZE DEMONSTRATION KIT
enables you to make a graphic demonstration of SABANOL Superiority, Economy and Safety right at your customer's desk.

AMERICAN SAND-BANUM CO.
Established 1926
9 Rockefeller Plaza
New York 20, N.Y.

COMMERCIAL & INDUSTRIAL oilburning

this; if he has a cup-line oil heater, he may now need a much larger cup-line heater. If a heater is used, five years of use may have plugged it somewhat and made it less effective. In that case, cleaning the heater is in order.

Odd two-tank Job

Odd two-tank installations are the subject of many odd inquiries. How to give one burner oil from two tanks automatically, with the tanks at different levels?

Here's one like that, from G. S. R., Stamford, Conn.:

"Regarding your 'Everyday Snags' item, page 174 of your January issue, entitled, 'Anti-Siphon saves the Day':

"Have you suggestions for piping two 275-gallon fueloil tanks of different sizes and different locations?

"Two separate boilers and oilburner installations were used in this two-family house. Each had its own 275-gallon tank. That's how this situation came about.

"The local code allows only one 275-gallon tank inside, unless the second tank is walled-in and back-filled with sand.

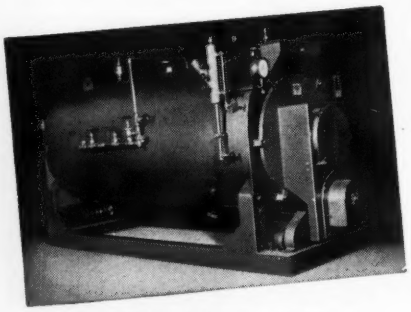
"We now have in this two-family house one modern heating boiler, instead of the two old ones; it provides two-zone heat. One of the already-installed tanks is 42" high, and is in the basement. The other is 26" high, and is outside under the porch.

"We will be happy to receive suggestions. We cannot gravity the oil from the 26" tank to the 42" tank because the bottom of the 26" tank is below the top of the 42" tank. The code requires the use of an anti-siphon valve."

The sketch sent in by G. S. R., Stamford, shows the tops of the two tanks at the same level, as they are in accompanying Diag. 1.

In many localities, a dealer may

WANTED: DISTRIBUTORS FOR CONTINENTAL BOILERS



50 hp Continental Boiler. Over-all range 20 to 500 hp, high or low pressure. Request Catalog 102.

Select territories throughout the U. S. are still open.
And with the *Boiler Engineering* franchise . . .

- You get a top quality product—the CONTINENTAL is easy to sell, install, maintain and service. It has several outstanding exclusive features—plus an 80% efficiency guarantee.
- You get a closed territory—big as you can handle.
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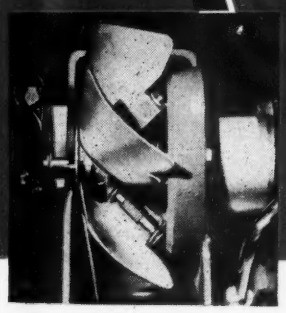
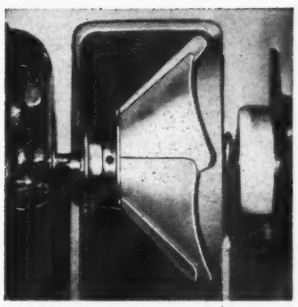
CONSERVES THE HEAT IT MAKES!



AIR-SEEL fan in "on" position.



AIR-SEEL fan in "off" position.

By "closing the door" on heat-wasting cold air during "off" period, Silent Glow's AIR-SEEL saves heat . . . fuel . . . and fuel dollars. The patented AIR-SEEL fan is scientifically designed with blades that automatically fold flat against each other when burner stops. This exclusive feature "seals" the heat within the heating plant . . . and, unlike ordinary burners, prevents the passage of cold basement air through the intake into the system.

Important, too, the AIR-SEEL fan is equipped with micrometer flame control for adjustment of both velocity and amount of air to fit varying fire-box conditions. Another fuel-economy feature!

That all adds up to a "dollar-saving" story that's easy to tell, easy to sell . . . and is a business-building opportunity you can't afford to miss.

Sell AIR-SEEL and you're sure of more profitable oil burner sales!

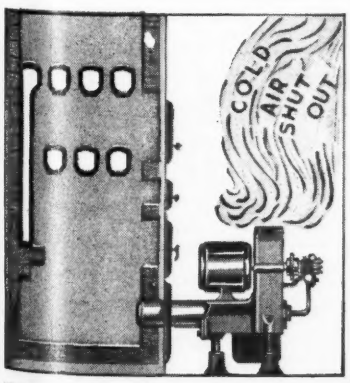


Illustration above shows how AIR-SEEL prevents intake of cold air.

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Those Who Know Choose SILENT GLOW OIL BURNERS

To: THE SILENT GLOW OIL BURNER CORP.

850 Windsor Street, Hartford 5, Connecticut
1500 So. Western Ave., Chicago 8, Illinois

Please send me complete information about AIR-SEEL

Name _____

Company _____

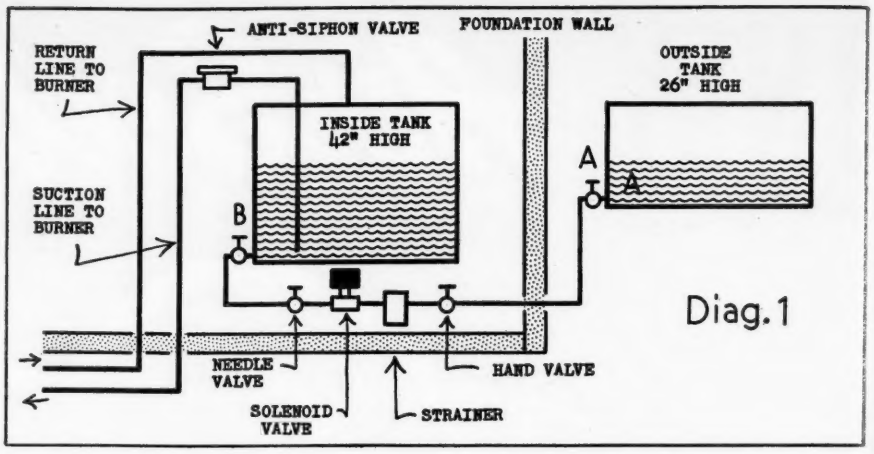
Street _____

City _____ State _____

68L51

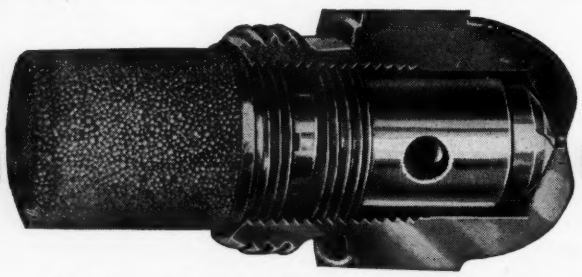
solve this problem simply by running a line that connects the bottom of the two tanks. The line runs from "A" to "B" in Diag. 1. In such localities, none of the gadgets shown in this line in Diag. 1 is needed.

On this simple basis, the level of oil in the two tanks would be the same after both tanks are filled, and would stay the same until the outside tank becomes empty. Then the burner would use all of the oil in the inside tank. The outside tank would become empty first.



Diag. 1

A SURE FIRE TIP . . .
FROM *Monarch!*



Look at These Nozzle Features:

1. Every Tip individually tested for Spray Angle and Capacity—your guarantee of uniformity.
2. Self-Centering internal assembly always produces a balanced spray—No lopsided fires.
3. Micro-Finish of Tip and Disc seats plus extremely close manufacturing tolerances insure accurate capacity control.
4. Will handle any domestic oils currently being supplied in the United States or Canada.
5. Tip, Disc and Locknut are made of a High Chrome Stainless Steel for maximum heat and wear resistance.
6. Five different series available for producing various spray characteristics—all developed through hundreds of *Fire tests* in both Laboratory and Field Work.

"48" Nozzle Box

Don't jumble your nozzles loosely in your tool box like "nuts and bolts" if you expect them to be usable. Carry as many as 48 nozzles securely in this sturdy, compact steel box.

Nozzle-Firebox Slide-Chart

No more digging through catalogs for proper nozzle capacities for certain loads, correct fire box sizes for different firing rates, or nozzle capacities at different operating pressures. This pocket slide-chart gives all these (and more) figures at a glance.

DEALERS: Buy from your Monarch Jobber

MONARCH MFG. WORKS, INC.

2503 E. ONTARIO ST., PHILADELPHIA 34, PENNA.

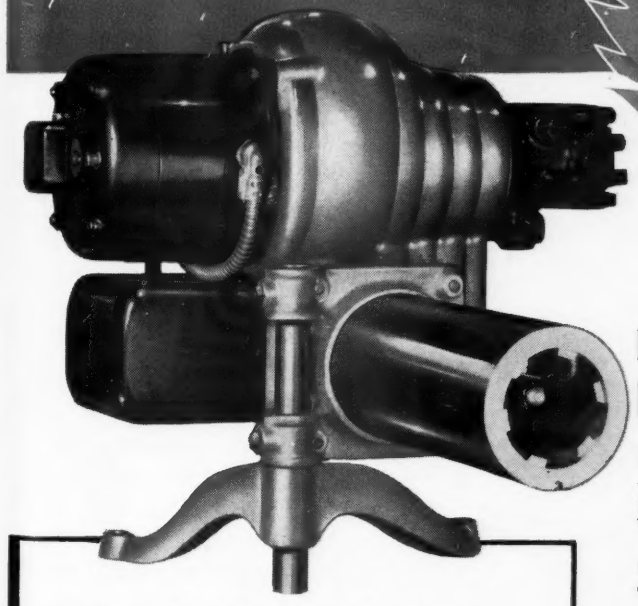
Canadian Sales Agents: (Except B.C.) Canadian General Filters, Ltd., 2679 Danforth Avenue, Toronto 13
Central and Southern Europe: A Coutau, Rue de la Soie 16, Geneva, Switzerland

Why the inquirer says he can not gravity-feed oil from the 26" tank to the 42" tank is a mystery . . . unless his reasoning is that he is not permitted to bottom-connect the two tanks. He must be thinking that oil from the 26" tank should, with a gravity-flow arrangement, flow into a top connection of the 42" tank.

If his local inspectors are against connecting the bottoms of the two tanks, they must fear a spill of all the oil from both tanks into the basement in case of a break in the 42" tank. The gadgets in line "A" to "B" can get around that fear, with certain inspectors anyhow. The needle valve is set for only a trickle of oil, for the flow through it need be only slightly higher than the gph rate of the burner. The solenoid valve is wired to be open only when the burner motor is running. The strainer is needed to keep dirt and sediment out of the needle valve and the solenoid valve. Because oil flows through the needle valve at only trickle-rate and only with the burner running, this trick arrangement is acceptable to many inspectors who won't permit such tanks to be bottom-connected.

Diag. 2 goes further, and can be used even with the second tank considerably below the first tank. A wall pump is wired in parallel with the burner motor. The solenoid valve in the outlet line of the wall pump is wired the same way. The hand valve next to the solenoid valve (a needle valve should be used here) is opened only wide enough for the same trickle-flow of oil mentioned earlier. This valve must not be open so far that oil flows out of the wall pump reservoir

NOW! Mueller Climatrol Atomized Sunburst Oil Heating



Hit your Market with the Hottest Heating Story in Years — Cash in NOW!

If you want to make more money, get the details on Mueller Climatrol Atomized *Sunburst* Oil Heating. Here is a new, planned merchandising program designed to help you get a greater share of the big oil conversion burner market.

Yes, push Mueller Climatrol atomized *Sunburst* oil heating — you sell a famous, nationally advertised brand name; you are backed by one of the oldest and largest manufacturers in the industry; you are supported by one of the strongest and most aggressive advertising and promotional programs in the industry.

Write today for details on our special dealer sales kit and selling information on Mueller Climatrol Atomized *Sunburst* oil heating. Use the convenient coupon below.

Check these features

Wide Capacity Range: For converting both furnaces and boilers to automatic oil heating. Available in nozzle sizes of one to five gallons. Blast tube in 12″ or 20″ lengths.

Mueller Patented Firing Head (U. S. Pat. No. 2,221,519): Scientific mixing of oil with primary and secondary air provides hottest, cleanest flame — the Mueller Climatrol atomized *Sunburst* flame.

Handsome Casing: Polished aluminum casing has eye-appeal and "buy appeal" for your customers.

Easy to Service: Access cap at rear of blast tube permits adjustment of nozzle position, electrodes, or firing head from outside.

Easy to install, adjust: Sturdy, adjustable stand simplifies installation; burner is easily set for high CO_2, low stack temperatures. Properly installed, this burner is trouble-free, and will provide years of owner satisfaction — *without frequent, costly call-backs.*

Approved: By Underwriters' Laboratories, Inc., and by thousands of satisfied home owners and heating contractors.

Sunburst **oil heating makes sense to your customers — and dollars-and-cents for you. Tear out this coupon and mail today for money-making details!**

L. J. MUELLER FURNACE CO.
2050D W. Oklahoma Ave., Milwaukee 15, Wis.

Yes, I am interested in making more money with Mueller Climatrol atomized *Sunburst* oil heating. Send complete selling information and engineering data.

Name.....

Company.....

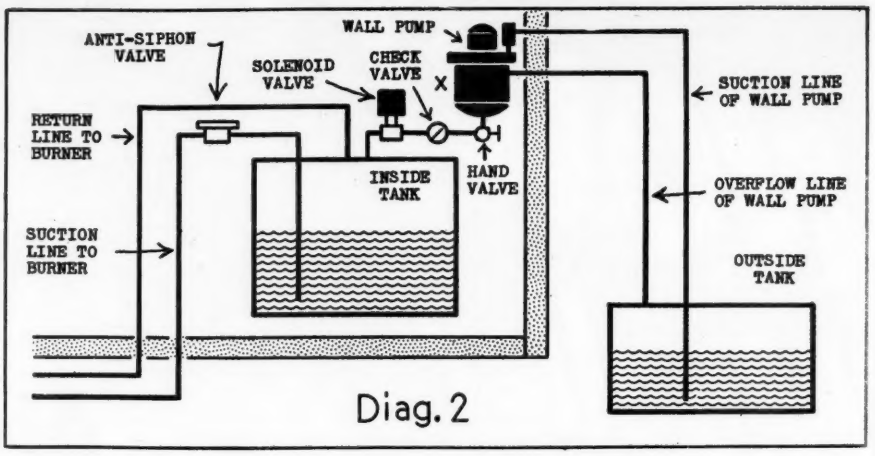
Address.....

City.....(.....) State.....

D-129

faster than the wall pump draws oil from the outside tank, for with oil in the outside tank the reservoir of the wall pump must not go dry . . . that would shut off of the wall pump with fueloil still in the outside tank.

Tanks do have limited numbers of top openings, and that brings up the problem of how to flow the oil from the wall pump into the top of the inside 275-gallon tank. A pipe tee in the fill line, vent line, or oilburner return line may be used for this, as only trickle-flow is involved. The check valve below the wall pump prevents backwards flow of oil into this pump, through its outlet line, at any time. As the oil level on the inside tank may reach the level of "X," which is the level of the oil in the reservoir of the wall pump, all tank and piping connections up to this level must be absolutely oil-tight. At some bother, it is possible to get around this last disadvantage—locate the wall pump lower, so low that it can't put a head of oil beyond the top of the inside tank—have the wall pump flow oil into a bottom connection of the inside tank.



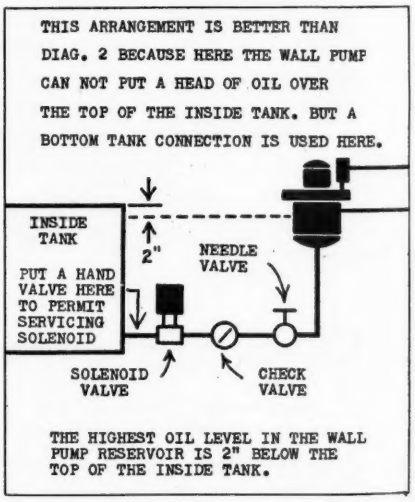
Diag. 2

THERE'S A FUTURE FOR YOU WITH
Bethlehem DYNATHERM
The Bethlehem DYNATHERM Creates Satisfied Customers . . . gives them more for their money in fuel economy, in compactness, comfort and convenience!
The Bethlehem DYNATHERM offers all the features that make your sale easier . . . The Whirling Flame . . . Unit Engineering . . . "Thermos Bottle" Insulation . . . Beautiful Cabinet.
OHI

Despite the DYNATHERM'S outstanding advantages it costs amazingly little more than converting an old boiler!

A few exclusive BETHLEHEM DYNATHERM territory Franchises are still available. Wire or write immediately for full information!

BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA


THIS ARRANGEMENT IS BETTER THAN DIAG. 2 BECAUSE HERE THE WALL PUMP CAN NOT PUT A HEAD OF OIL OVER THE TOP OF THE INSIDE TANK. BUT A BOTTOM TANK CONNECTION IS USED HERE.
INSIDE TANK
2"
NEEDLE VALVE
PUT A HAND VALVE HERE TO PERMIT SERVICING SOLENOID
SOLENOID VALVE
CHECK VALVE
THE HIGHEST OIL LEVEL IN THE WALL PUMP RESERVOIR IS 2" BELOW THE TOP OF THE INSIDE TANK.

Tricky arrangements of these kinds should be avoided when possible, but on certain jobs you can't avoid them and obtain the fully automatic results you are determined to provide for one of your users. Before making a tricky installation that uses a wall pump, make certain to submit your plans to the manufacturer of the wall pump you will use. Show every detail, and obtain the wall pump manufacturer's approval before you install the equipment.

(*Please turn to page 156*)

Engineered for DEPENDABILITY

Delco Motors

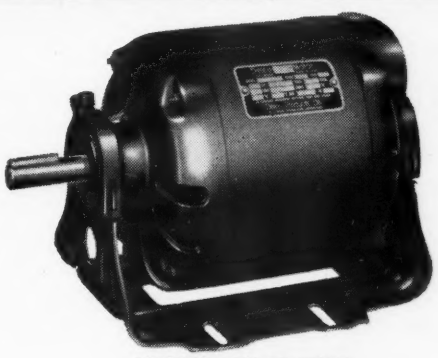
Careful dynamic balance is only one reason why Delco motors are preferred by many leading manufacturers of heating and ventilating equipment.

An impressive list of features contributes to Delco's enviable record for continuous, trouble-free performance. These features include uniflow pressure-cast rotor conductors, steel-backed tin babbitt sleeve bearings, cored oil wells, varnish-dipped and baked motor windings. Careful selection of materials, too, is a big factor in enabling Delco motors to give longer, more dependable service.

The motors you need for your products, in sizes from fractional to 100 h.p., are in the great Delco line. For information on motors for any application, address Delco Products, Dayton, Ohio, or our nearest sales office.

MOTORS FOR OIL BURNERS
Delco flange-mounted motors, split-phase—1/6- to 1/4-horsepower ratings.

THE BEST RUNNING MATE YOUR PRODUCT CAN HAVE



MOTORS FOR BLOWERS
Delco resilient-mounted motors, split-phase and capacitor-start types, single- and two-speed designs—1/6- to 3/4-horsepower ratings.

DELCO DAYTON OHIO

DELCO PRODUCTS

Division of General Motors Corporation • Dayton, Ohio

SALES OFFICES:

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fuel oil & oil heat

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 18th.

New Jersey Group to meet at Asbury Park, April 30

THE FIFTEENTH annual convention of the Fuel Oil Distributors Association of New Jersey is to take place at the Hotel Berkeley-Carteret, Asbury Park, N. J., April 30 and May 1, with business sessions scheduled for both days, and with more equipment exhibits scheduled than ever before.

Beginning with the Association's annual meeting and election of officers, the morning session on April 30 concludes with a panel on "Meeting gas Competition," moderated by Robert Gray, editor, FUELOIL & OIL HEAT. Four speakers are to participate: Donald Lawes, Jr., Lawes Coal Co., Inc., Shrewsbury; Robert E. Harnisch, Harnisch Fuel Co., Irvington; Theodore Holmes, Jr., Ridgefield Coal & Supply Co., Ridgefield and Robert H. MacKinney Oil Co., Highland Park, N. J.

Speakers at the luncheon to be held on April 30 include W. Chalmers Burns, Hartol Petroleum Corp., who is slated to discuss the value of public relations for the small business man, and Stanley C. Hope, president, Esso Standard Oil Co., whose topic will cover "Supply and Demand in a free Market." The only other activity on April 30 is to be the annual dinner, dance and entertainment.

Another morning session on May 1 also will feature a Panel, this one on "Your Business," with Steve Terleski, Norton's Fuel Service, Phillipsburg; Nelson Thompson, Nassau Oil Co., Princeton; Michael Formichella, Eastern Fuel Co., Summit and John deC. Blondel, John Blondel & Son, Montclair, each contributing his thoughts on specific points of management.

L. T. White, Cities Service Oil Co., speaking on "Developing Profits through Training" and Charles J. Hodge, Glore Forgan & Co., who is to analyze the "Impact of the new fueloil Pipeline from Texas to Newark on fueloil Distributors," will be heard at a noon luncheon on May 1, marking the end of the convention program.

NEWS
FOR YOU...
FROM THE
Nu-Way
CORPORATION
WESTERN UNION
MR. OIL BURNER DEALER
1224 SALES STREET
PROFIT TOWN, U.S.A.
NOW THREE LARGE CAPACITY MODELS XL-10, XL-15 AND XL-20 AVAILABLE IN THE FAMOUS NU-WAY LINE OF OIL BURNERS. FUEL BURNING CAPACITIES 10 G.P.H. TO 20 G.P.H. DESIGNED FOR USE IN APARTMENTS, FACTORIES AND OTHER BUILDINGS REQUIRING LARGE CAPACITY OIL INSTALLATIONS. NU-WAY'S EXCLUSIVE PATENTED FEATURES INCLUDED. MEANS EASIER SALES, MORE PROFIT. COMPLETE SPECIFICATIONS AND DATA SENT UPON REQUEST.
NU-WAY CORPORATION
ROCK ISLAND, ILLINOIS
OIL HEATING EQUIPMENT
Sold through Jobbers and Distributors
Also Special Applications for Furnace or Boiler Manufacturers
"Automatic Oil Heat Exclusively Since 1921"

OHI of America moves headquarters Office

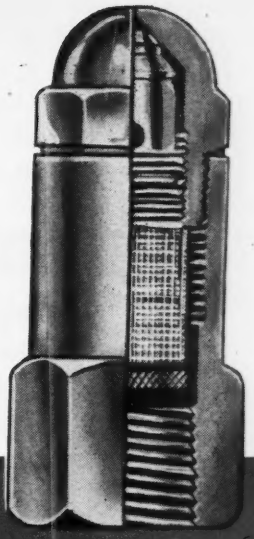
REMOVAL of the headquarters offices of the Oil-Heat Institute of America, Inc. has been completed to 500 Fifth Ave., New York 36, N. Y. New telephone number is LOngacre 4-3755.

Ralph Becker, managing director, explains that even though the new, air-conditioned offices are one floor below street level, it does not mean that the Institute "has gone underground." Located at 42d St., the 500 Fifth Avenue location is one block from Grand Central Terminal and is close to hotels and subways.

Service Managers Group organized in NewYork City

ON MARCH 6 an organizational committee met to formalize the Metropoli-

Eddington UNITS CUT SERVICING TIME



Eddington OIL BURNER FILTERS

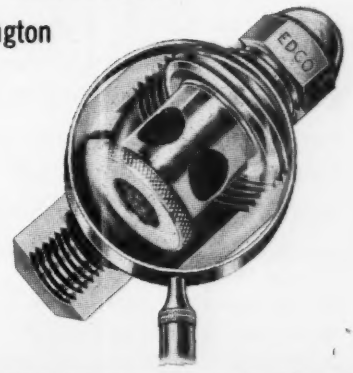
have greater filtering area; greater sump capacity. Filter cap has special lip that prevents leakage; lower nut is sealed in . . . cannot leak. Interchangeable with other makes.

Eddington® OIL BURNER NOZZLES

are right for spray angle, atomization, and rated capacity. Large capacity Monel strainer keeps orifice and slots from plugging—traps final impurities right in the nozzle. Factory-tested for your protection.

Eddington NOZZLE FILTERS and INSPECTION MIRRORS

—two more reliable Eddington aids to better servicing.



We'll be glad to send you complete information on any Eddington products. Write:

EDDINGTON METAL SPECIALTY CO.

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STRAINERS • SPRAY NOZZLES • REGULATING VALVES • PUMPS
FILTERS • AIR CONES • STABILIZERS • INSPECTION MIRRORS

tan Oil Burner Service Managers Club. Elected chairman of the New York City group was Joseph S. Matachinskas, Brooklyn Cornell Utilities, Inc.; Ed Baerenklau, Baerenklau & Co., was named secretary. The group agreed to meet once a month at a luncheon meeting to discuss mutual problems, with the thought that an interchange of ideas among the service managers would improve the service rendered by their companies.

Present at the organizational meeting besides Matachinskas and Baerenklau were: Frank Schafhantle, Baerenklau & Co.; S. Ginsburg, Cirillo Bros.; A. Senft, Colony Fuel Oil Co.; Herb Gray, Fleet Utilities; Dave Hamilton, Geo. A. Hamilton, Inc.; H. Karlin, Howard Fuel Corp.; H. Sugfried, Iron Fireman Corp.; Wm. Kramer, "K" Co.; Mel Marmor, H. Lieblich & Co.; Otto Gruntorad, North Shore Fuel; Arthur Ducas, Osher & Reiss, Inc.; Jack Schreiber, Petroleum Heat & Power Co.; Herman Levy, Preferred Oil Heat; Joe Henry, Premium Service and Don Mignogna, Skaggs-Walsh, Inc.

Don Condon new President of Wisconsin Petroleum Assn.

AT THE 27th annual meeting of the Wisconsin Petroleum Assn. at the Schroeder Hotel, Milwaukee, February 25-26, Don Condon was elected president to serve the next two years. Condon heads Condon Oil Co. of Ripon, Wisc. The new vice-president is John S. Kaiser of Golden Rule Oil Co., Eau Claire, Wisc. Under the normal succession plan he will be president two years hence. The retiring president, who masterminded the convention this year, was F. E. Yerly of Yerly Coal Co., La Crosse, Wisc. Ken King of Madison is executive secretary.

The opening speaker of the convention was Robert Gray of FUELOIL & OIL HEAT. A condensation of his talk is reproduced in this issue. Next was L. T. White, director of business education and research, Cities Service, New York, who discussed "How your association helps you."

Pointing out that in most of the world today such gatherings would not be permitted, he said that such a meeting is a living example of two of our guaranteed freedoms, Freedom of Speech and Freedom of Assembly. A trade association, he feels, is typical of what can be done in America, and the highest compliment you can pay a man, in White's opinion, is to invite him to join your trade association.

In the country today there are 12,000 trade associations, another 12,000 civic clubs and 4,000 chambers of commerce, or a total of 28,000 on the trade or marketing side of our economy.

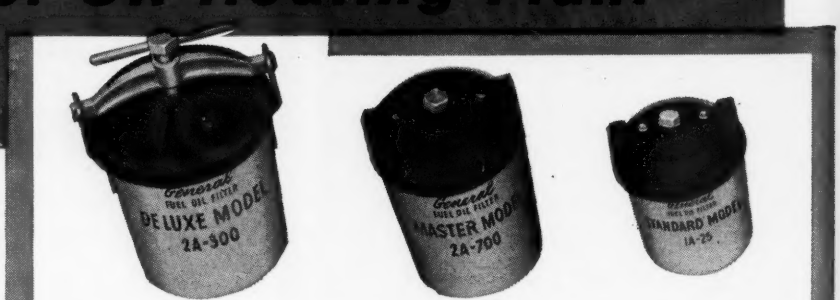
On the production side there are 70,000 unions and 125,000 farm organizations, or 195,000 with opposite viewpoints to ours. The difference between capitalism and communism, he feels, is in trade or distribution, not in production. Communists limit or prohibit the freedom to offer, freedom of choice.

Simply joining an association won't make you rich, White emphasized, "It's not a slot machine where you push in money and out comes your fortune, yet there's nothing you can't do if you'll work together."

The second day speakers were Dave

General FUEL OIL FILTERS
For Any Fuel Oil Heating Plant

Easy, Sure Service Profit
Wherever Fuel Oil Is Used



You can be sure of *continuous* profit when you install a GENERAL. Wherever fuel oil is used, GENERALS prevent clogged burner nozzles, provide clean, steady oil heat, and insure quick cartridge replacements that mean easy service dollars for you.

- Easy cartridge replacements each season.
- No more troublesome service "call-backs."
- Satisfied fuel oil customers year 'round.

DELUXE MODEL 2A-300	MASTER MODEL 2A-700	STANDARD MODEL 1A-25
For BIG DIRTY TANKS	For MEDIUM NEEDS	For SMALL HOMES, SPACE HEATERS, ETC.

FASTEST, SUREST FILTERING KNOWN
CLOGGED BURNER NOZZLES ELIMINATED
ALL-WOOL CARTRIDGE TRAPS FINEST PARTICLES
JUST TWO PIPE CONNECTIONS REQUIRED

CLEAN RIGHT SOOT REMOVER
Soot deposits also raise fuel costs! Clean Right burns safely, gently—leaves no residue. Made for General Filters, Inc.

General Filters carry this Underwriters' Laboratories Seal

GENERAL FILTERS INCORPORATED
12890 WESTWOOD AVENUE
DETROIT 23, MICHIGAN
CANADIAN FACTORY BRANCH: CANADIAN GENERAL FILTERS, LTD., 2679 DANFORTH AVENUE, TORONTO 13, ONTARIO

1953 EASTERN Biennial Exposition of Oil Heat

HOTEL STATLER · BOSTON

JUNE 2 · 3 · 4 · 5 · 1953

Sponsored By OIL HEAT INSTITUTE OF NEW ENGLAND

839 BEACON STREET, BOSTON 15, MASS.

Livingston of Washington, Iowa, who talked on "Piddlers, Peddlers and Salesmen," and Dwight F. Benton, vice-president, Standard of Indiana, whose topic was "The Margin of Success."

He discussed jobber marketing problems, pointing out that not all are in complete agreement of the dsirability of percentage margins, saying, "If the percentage margin is predicated on the basis of the dealer tank wagon price, how will jobber margins of suppliers that do not post a dealer tank wagon price be figured? Will this be based on a price posted by a reference marketer? Such a practice poses many problems and warrants your very serious consideration."

No two jobbers actually operate on the same margin, he continued, and predicted that competition within the oil industry will sharpen in the coming years, with a return indicated to the "survival of the fittest." To be among the "fittest," Benton advanced "eight very important phases of business control equally important to both supplier and jobber: An accurate monthly profit and loss statement; effective administration of accounts receivable; good inventory control; reducing stock losses of light products; forecasting and budgeting capital expenditures; planning expansion programs well in advance; determining if finance charges are the lowest available; being profit-, not volume-minded."

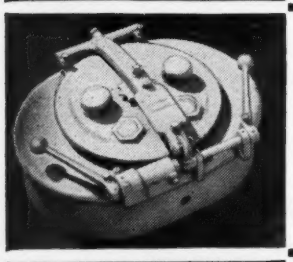
FOR QUICK-OPENING, TIGHT-CLOSING, POSITIVE-LOCKING MANHOLES

SPECIFY "Manholes by Philadelphia Valve"

no matter who builds your tank trucks

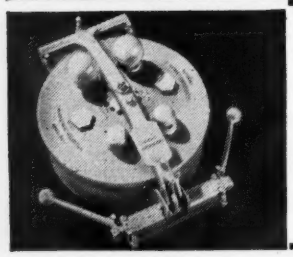
Standard Manhole

Size 12" x 16" with 6½", 8", or 10" fill opening. A slight turn of locking ring opens and closes cover.



Self-Closing Manhole

Size 12" x 16" with 10" fill opening. Self-closing, with positive locking device. Opened by raising lever on either side.



14" Diameter Self-Closing Manhole

For heavy fuel-oil tanks. Self-closing, with positive locking device. To open, lift either lock arm and raise cap.

Write the words "Manholes by Philadelphia Valve" into your order. These quick-opening manholes are absolutely tight. They surpass every fire underwriter's standard. They open and close easily and quickly. They are built to outlast the tank.

Each type of manhole is simple, strong, and foolproof. Covers are leakproof. Covers and plugs are of malleable iron or heat-treated aluminum. No cast iron is used. "5-in-1" vents automatically close if truck upsets, and will release under 6 lbs. pressure to prevent explosion in case of fire. Gaskets are easy to keep tight.

Philadelphia Valve manholes are standard with many major oil companies from coast to coast. Make them standard on *your* tank trucks, too!

Send for catalog 170 for descriptions and engineering drawings of all Philadelphia Valve Company products.

PHILADELPHIA VALVE COMPANY

3413 Aramingo Avenue, Philadelphia 34, Pa.

Pacific Coast Distributors:

Oil Marketing Equipment Co., 325 Fremont Street, San Francisco 5, California
Howard Supply Co., 5125 Santa Fe Avenue, Los Angeles 11, California

Warm Air Association formed in Charlotte, North Carolina

A GROUP of nineteen firms in the Charlotte, N. C., and the Mecklenburg County area in North Carolina have formed the Warm Air Heating and Air Conditioning Association of Charlotte. Officers are: J. H. Daughtry, Daughtry Sheet Metal Co., president; E. P. Nisbet, vice-president; Grady Broome, second vice-president; Paul W. Brown, secretary-treasurer and Tom Kirkwood, assistant secretary-treasurer. Directors are: Mark Johnson, Banks Simpson, Roy S. Garmon, W. G. Smith and Jim Conway.

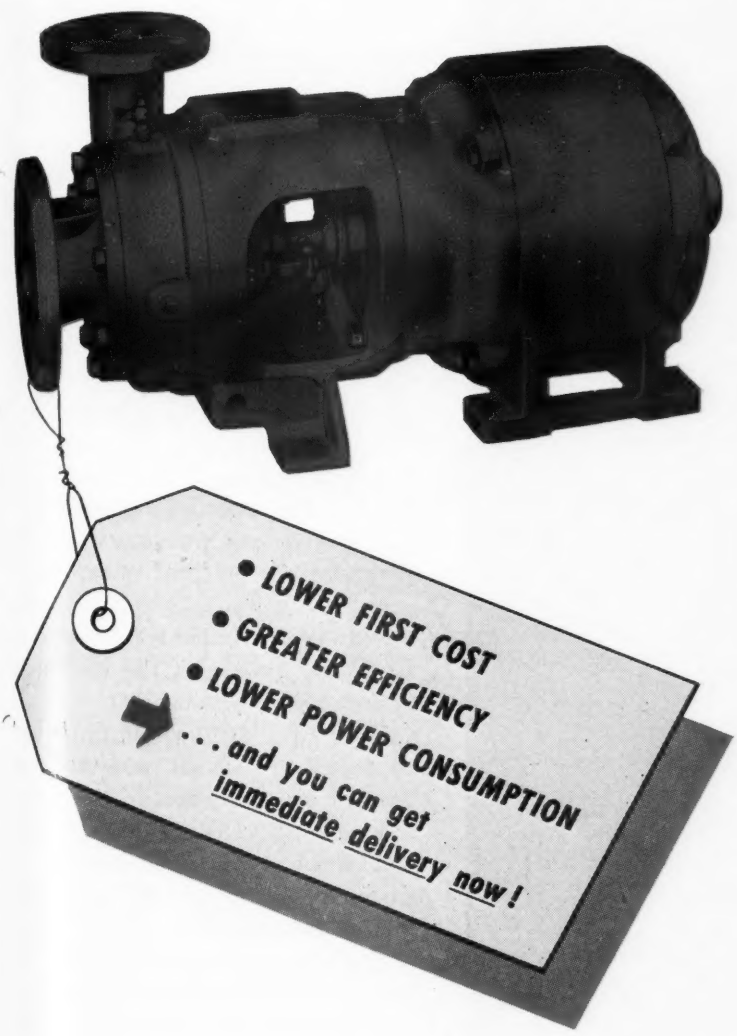
Purpose of the organization was established at its organizational meeting as dedicated to the advancement of warm air heating and airconditioning installations and industries; promotion of high standards of workmanship, installation and service to the public; institution of co-ordinated standards and establishment of a clearing house for the collection, correlation and dissemination of industry facts and figures.

Distribution Division offers scenic Calendar for 1954

ANNOUNCEMENT has been made of the availability of a Scenic Art Calendar for 1954, prepared for members of the Distribution Division, Oil-Heat Institute of America, New York 36, N. Y. The calendar includes a page for December 1953 so that the calendar can be mailed out during November to a dealer's customers, before his competitor's and also early enough to miss the Christmas mail rush.

Fred Burroughs, national secretary of the Division, asks dealer members who are planning on using the calendars to place their orders promptly

slash fuel oil handling costs



HERE'S HOW IT'S BEING DONE WITH INGERSOLL-RAND MOTORPUMPS FOR FUEL OIL HANDLING

First, you pump the same amount of fuel oil into tanks and trucks with a smaller Ingersoll-Rand Motorpump. Next, you save on first cost and get many operating economies, including lower power consumption. Many fuel oil dealers' records show this to be true.

All this is possible because Ingersoll-Rand has built into this pump, design features found in no other pump on the market. I-R Motorpumps have proved themselves to be the leader in their horsepower range.

To bring down fuel oil handling costs and speed tank and truck loading, decide now to install Ingersoll-Rand Motorpumps. You can get IMMEDIATE DELIVERY from large stocks in a wide range of sizes. Just get in touch with your nearest I-R distributor or representative. INGERSOLL-RAND COMPANY, 11 Broadway, New York 4, New York.

MOTORPUMP

. . . designed for

PETROLEUM MARKETING SERVICE

available in sizes from ¼ to 50 hp.

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y. 792-9

fueloil & oilheat

and, as a bonus, offers a 5% discount for all orders received before June 1. The calendars range in price from 26¢ each in lots of 250, the minimum quantity, to 20¢ each when purchased in quantities of 10,000 or more.

The 1954 calendar consists of 14 full-color photographs of scenic views, one on the cover serving as a "Season's Greetings" card, then a sheet for December, 1953 and one for each month in 1954. Space is provided under each date for household memos and other space permits the dealer to specify a 3-line imprint. Size of the calendar is 6⅞" x 9⅛".

The cost has been kept down through the courtesy of *Arizona Highways*, scenic magazine, in permitting the Institute to use its expensive color plates in producing the calendars.

API Jobber Advisory Group names three Sub-Committees

THREE SPECIAL sub-committees have been named by J. E. Dyer, chairman of the Jobber Advisory Sub-committee, American Petroleum Institute, New York, N. Y. Each was given a specific assignment and asked to submit reports and recommendations at the mid-year meeting of the API Division of Marketing, May 4 and 5 in Dallas, Texas.

The jobber franchise Sub-Committee, headed by J. G. Jordan, Shell Oil, has been instructed to see what can be done to help jobbers make adequate preparation for the perpetuation of their businesses in the event of death or incapacity.

H. E. Davenport, G. W. Pickering Co., heads the accounting Sub-Committee, charged with reviewing the problem of accounting methods for jobbers and distributors and examining a manual just completed by API's Financial and Accounting Committee.

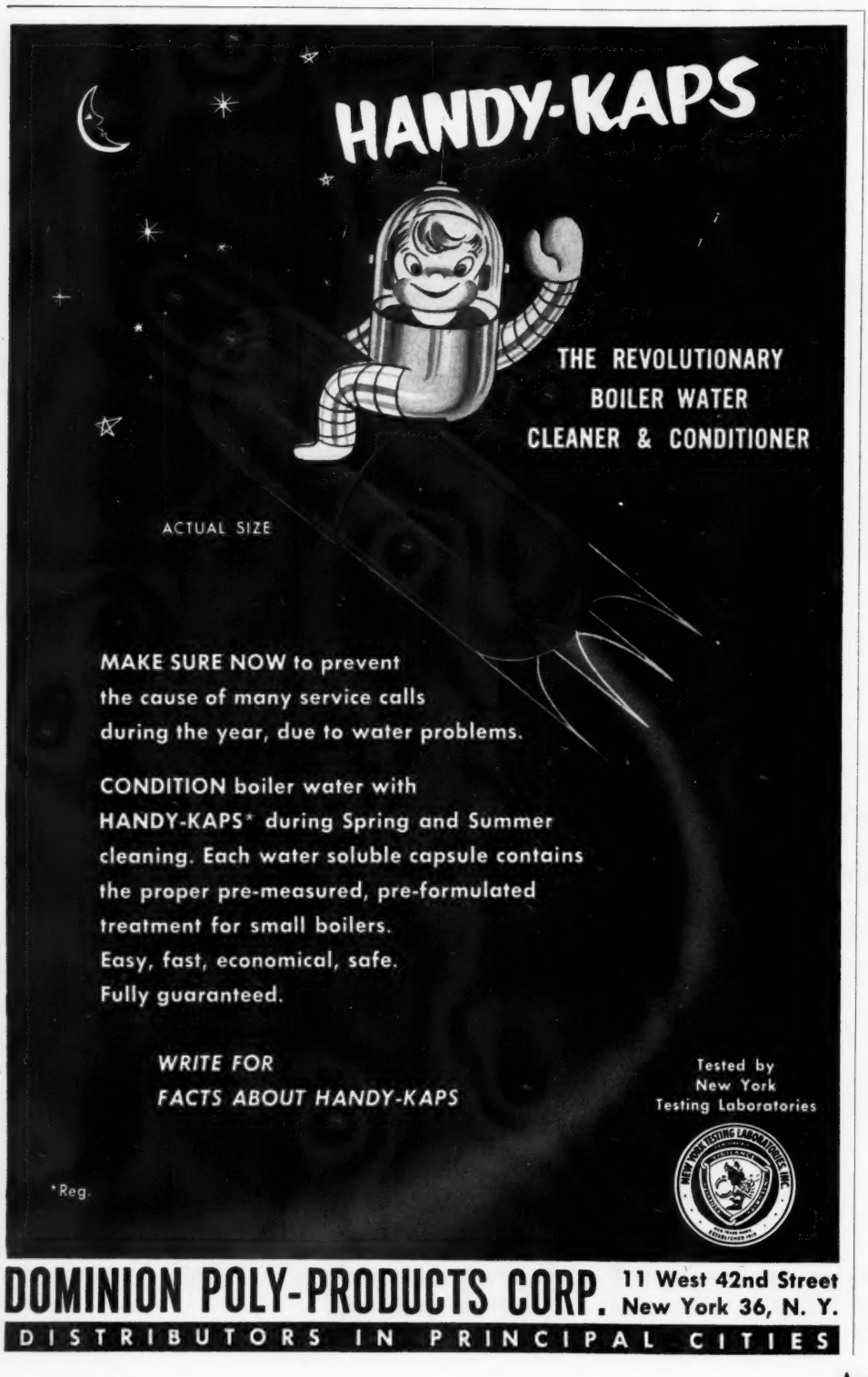
The third special committee is to study service station sites and construction.

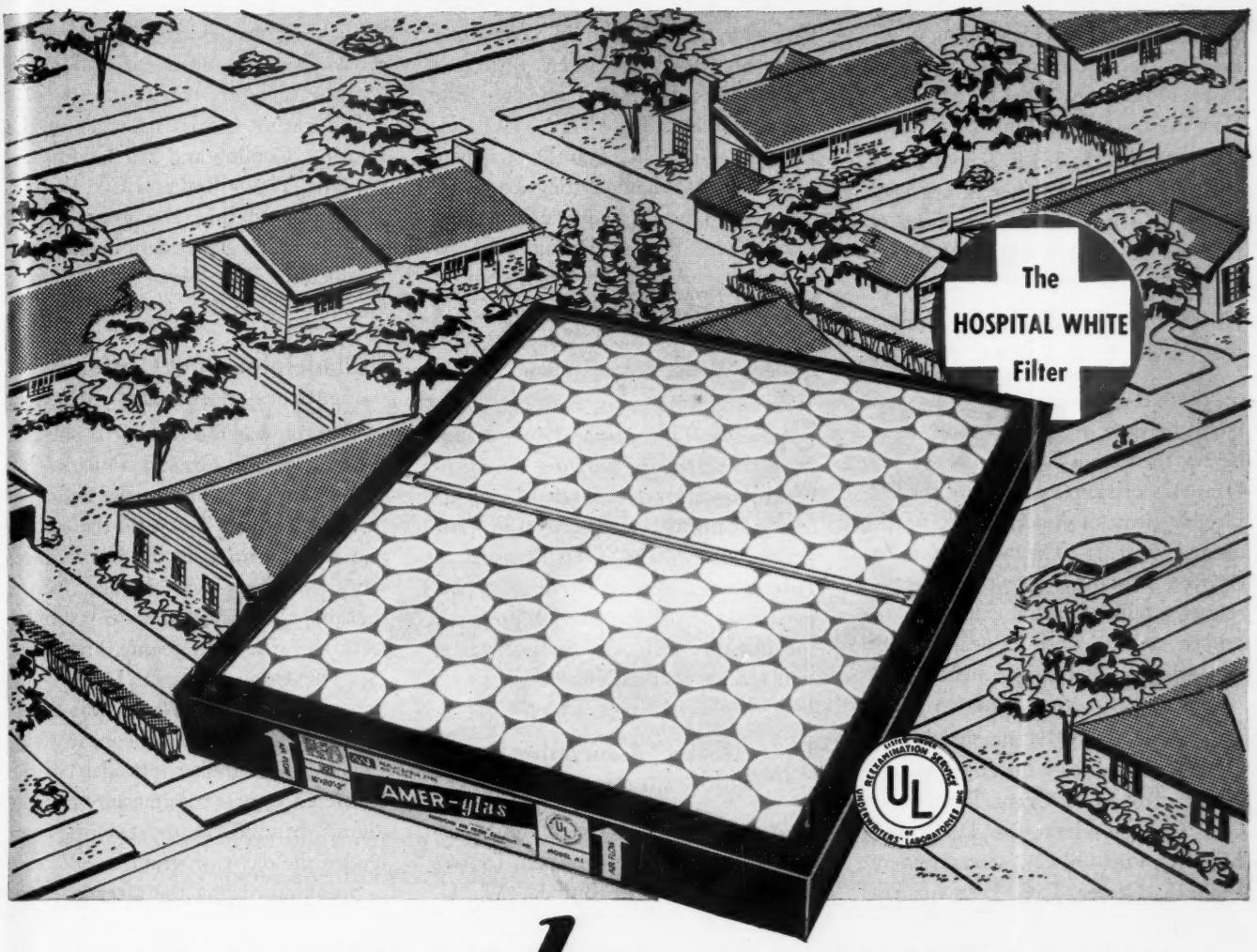
I-B-R School graduates its 6,000th Student

THE 6,000TH STUDENT has been graduated from the I-B-R School of Modern Heating, sponsored by The Institute of Boiler and Radiator Manufacturers, New York 17, N. Y. He was Olen J. Stone, a salesman employed by the Mid-Valley Supply Co., St. Louis, Mo., who attended the School in St. Louis, January 28 to 30. He had also attended two previous schools and was enthusiastic in his praise for the practical value of the instruction he had received. Stone received a special certificate from Arthur L. Wales, director of the Institute's field training program.

Since April 1950 the Institute has conducted 110 schools, with students drawn from 1,387 cities and towns in 37 states, the District of Columbia and Canada. Fifty-four per cent of all students who attended the schools came from installers.

The current schedule of schools includes one in Minneapolis on April 8 to 10, followed by: Iowa State College, Ames, Ia., April 14 to 16; Milwaukee, April 21 to 23; Kalamazoo, Mich., April 27 to 29; Hampton, Va., May 5 to 7; Raleigh, N. C., May 12 to 14; Atlanta, Ga., May 19 to 21; Tampa, Fla., May 25 to 27; Pitts-





AMER-*glas* THE *WHITE* FILTER FOR FURNACES AND AIR CONDITIONING UNITS

BIGGEST PROFIT BUILDER..in a BIG PROFIT MARKET

You make a greater profit on AMER-*glas* filters because of their *proved* selling power. It's a big profit business, and it means big volume, too! Four out of five warm air furnaces now being installed are forced air units . . . and leading domestic air conditioning units come equipped with AMER-*glas* filters. This means you have red-hot prospects . . . and steady, repeat business . . . for AMER-*glas* filters throughout the year! Check the profit opportunity there is in your trade area, then do something about it.

Display, sell AMER-*glas* filters—biggest profit builder in the big air conditioning and furnace filter market.

You can expect the best from

AAF American Air Filter
COMPANY, INC.

AMERICAN AIR FILTER CO., INC.
134 Central Ave., Louisville 8, Ky.

Please send me complete information on AMER-*glas* Replaceable Air Filters. Show me proof of the profits!

NAME_____

COMPANY_____

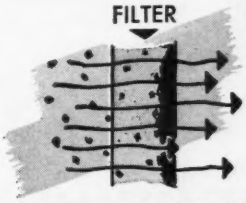
ADDRESS_____

CITY_____ ZONE____ STATE_____

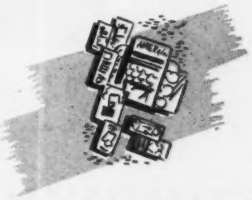
SELL THE AIR FILTERS . . . YOU'D BUY YOURSELF!

HOSPITAL-WHITE — AMER-*glas* filters look clean, outsell other brands on eye appeal alone.

SMOOTH TO TOUCH—no prickly slivers, unpleasant odor or greasy feel.



CATCHES "NUISANCE" DUST, holds it inside where it can't pack on the filter face and clog air passages.



AAF BACKS YOU WITH A COMPLETE SALES PUSHER KIT—everything you need for building business.

burgh, June 2 to 4; Binghamton, N. Y., June 9 to 11; Burlington, Vt., June 16 to 18; Boston, June 23 to 25 and New Haven, Conn., June 29 to July 1.

Tuition for the I-B-R School is $23. Students wishing further information may obtain it from the Institute, 60 East 42d St., New York 17, N. Y.

Union County (N. J.) Dealers hold first annual Meeting

ON FEBRUARY 27, exactly one year from the date of its activation, members of the Union County (N. J.) Oil-Heat Association, a chapter of the Oil-Heat Institute of America, held its first annual meeting. The association has enjoyed substantial growth and represents the bulk of fueloil gallonage area sold in the area with its nearly 50 independent fueloil dealer members.

As evidence of its approval of the progress to date, the membership re-elected unanimously the entire slate of officers: Robert M. Crane, Reel-Strong Coal Co., president; Leo D. Kramer, Monarch Fuel Oil Co., vice-president; Philip K. Carter, T. R. Loizeaux Fuel Co., secretary; Edwin H. Clements, Clements Bros., treasurer. Directors named are: Harry E. Engleman, Engleman-Goodfield; Harry Holland, Holland Fuel Cil; Leo D. Kramer, Monarch; Wes Lammerding, Lammerding Oil; Russell Mann, Mann Fuel Oils; Cyril Poling, Poling Oil; Al Rosenberg, Albert Fuel; Jas. Smith, Jr., Premier Oil; Les Stites, Fuel Oil & Supply; Al Germaine, Federal Oil; George Wood, Boice-Runyon.

Fred S. Burroughs, national secretary, OHI's Distribution Division, addressed the group, bringing the members up-to-date on recent developments in the Institute. He described in some detail the new "1953 OHI Treasury of Advertising," a portfolio of sales promotion-advertising material prepared for Institute members, each of whom will receive his own individual copy.

Unit Heater Association holds Election of Officers

AT THE annual meeting of the Industrial Unit Heater Association, Detroit 26, Mich., held in Buffalo, W. G. Schlichting was elected president; G. A. Mathis, vice-president and L. O. Monroe, secretary-treasurer.

Schlichting is sales manager of the Heating, Cooling and Air Conditioning Div., Young Radiator Co., Racine, Wis. and Mathis, the group's past president, is vice-president in charge of production, The New York Blower Co., LaPorte, Ind.

Philadelphia Fuel Conference gathers at one-day Meeting

MARCH 11 was the date of a one-day meeting of the Greater Philadelphia Fuel Conference, held at the Bellevue-Stratford Hotel. This was the second annual convention of the Conference, whose program was divided into a morning session devoted to coal subjects, the afternoon dealing with fuel-oil. The Hon. James H. Duff, U. S. Senator from Pennsylvania, was speaker at an all-industry luncheon, at which Edward G. Schreiber, president of the Conference, was toastmaster. A joint annual banquet in the evening concluded the day's program.

Speaking during the afternoon ses-

QUICK PROFITS . . . EASY INSTALLATIONS . . . SATISFIED CUSTOMERS

when you go after

REPLACEMENTS and CONVERSIONS

with

BANKHEAT BURNERS

Now is the time to replace oil wasting burners with a Bankheat. It's the easiest selling that you can do today . . . selling that will make you a profit, and a new set of satisfied customers.

Bankheat Burners have an unequalled reputation for oil-saving efficiency. In thousands of homes they are powering boilers, boiler burner units and water heaters. For many years in many lands they have been building up a record of economical performance. They're fully automatic, precision built, easy to install, exceptionally dependable. They are today's best bet for dealers who want sales. May we send you the full story?

There's an automatic Johnson Burner for EVERY heating need.

Johnson Oil Burners

Builders of fine Oil Burner Equipment since 1903

S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
Church Road, Bridgeport, Pennsylvania

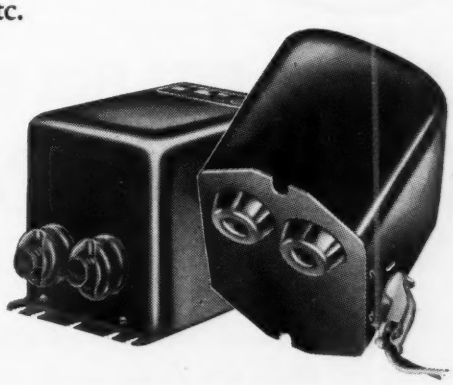
There's Real Value in Selecting Top Quality Transformers

Jefferson Ignition Transformers are universally recognized as the ultimate in design and precision construction. Dependable, long-life transformers are of prime importance to the oil burner manufacturer, dealer and service man who values a reputation for quality equipment and workmanship.

The engineering and production know-how of Jefferson has been an important factor in the wide acceptance of oil heating. For over 25 years, Jefferson research, design and manufacturing techniques have produced transformers to make oil heating successful, safe and sure. Jefferson's contributions to the industry have helped to eliminate many of the objections that originally existed . . . Old timers in the business remember the many handicaps—"puff backs", "radio interference", "oil flooded basements", "cold homes", etc.

Working intimately with oil burner engineers since the early days, Jefferson engineers have kept pace with the many and rapid developments of oil heating. Jefferson's traditional and uniform quality standards insure the top performance demanded by users of oil heat.

JEFFERSON ELECTRIC COMPANY
Bellwood, Illinois
In Canada: *Canadian Jefferson Electric Co., Ltd., 384 Pape Ave., Toronto, Ont.*



The name "Jefferson" has always meant the finest in transformers.

JEFFERSON (JEFFERSON ELECTRIC) **TRANSFORMERS**

sion, Robert Gray, editor, FUELOIL & OIL HEAT, traced the history of oil-burner installations for domestic heating and pointed up the importance of the oilheating dealers concentrating more on replacement and new home business.

Jobber governs his own Future, says Jordan

SPEAKING at the thirtieth annual convention of the Ohio Petroleum Marketers Association in Columbus, Ohio, on March 19, James G. Jordan, vice-president in charge of marketing, Shell Oil Co., declared that the most important factor affecting the future of jobbers in petroleum marketing is the action the jobbers themselves take. He said that all jobbers have definite obligations to perpetuate their companies beyond the business lifetime of a single individual, citing obligations to supplier companies, to employees, to fellow jobbers, to their dealers and communities.

The subject of perpetuation of the jobber business is important now, Jordan explained, because so many jobbers are reaching retirement age and "even death has become a big factor in the consideration of jobber relationships." He urged them to start thinking about who could succeed them, adding "There is no reason why satisfactory arrangements for perpetuation cannot be worked out for all jobbers."

Concluding, Jordan said, "I, personally, have great confidence in the jobbers through my personal and business dealing with you. You have played an increasingly important role in the petroleum industry. You have met and surmounted the problems of growth and competition, and you have assumed the attendant business and civic responsibilities. Now that the time has come when you must face this new responsibility as a group, I'm sure you will shoulder it, too."

THE DIFFERENCE MAKES
EXTRA SALES FOR SINCLAIR JOBBERS

SINCLAIR ANTI-RUST FUEL OIL
SO DIFFERENT IT'S PATENTED

Contains the amazing rust inhibitor RD-119...
which
Protects against corrosion and rust-clogged
filters and burner nozzles...
Reduces service calls...Builds good will and SALES.

SINCLAIR
FUEL OIL WITH RD-119®

ANTI-RUST Super Flame ®

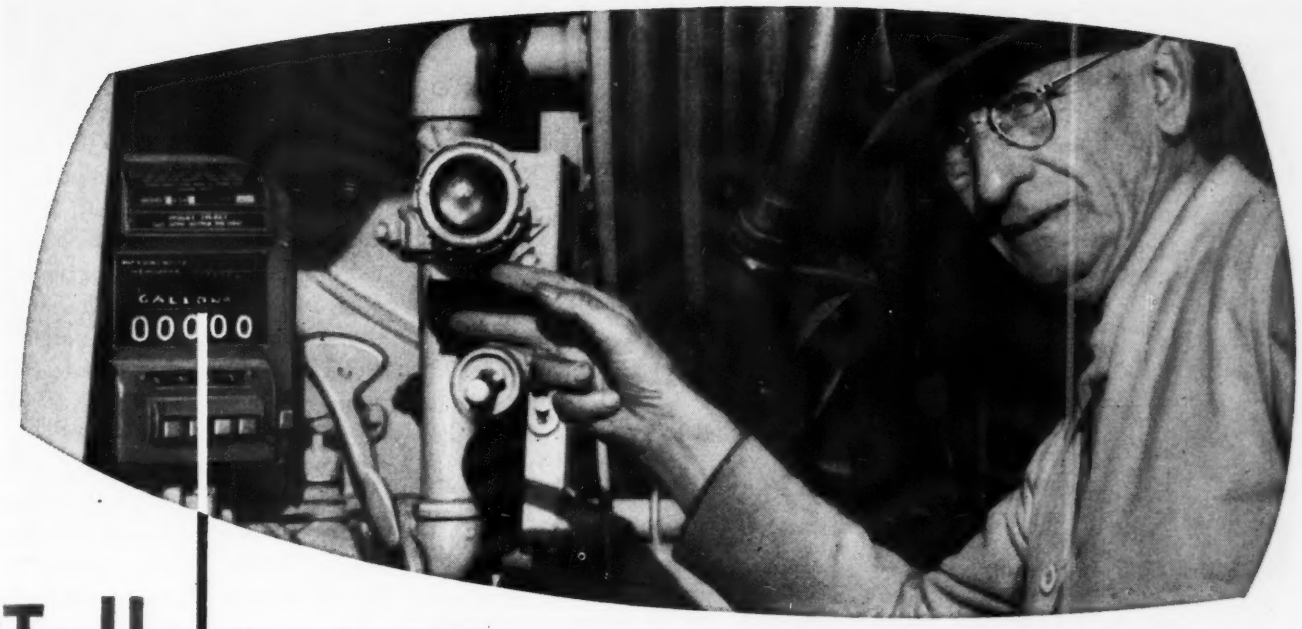
National Petroleum Council meets in Washington, May 28

WALTER S. HALLANAN, chairman, National Petroleum Council, has called a meeting of the Council for May 28 at 10:00 A.M. in Conference Rooms A and B of the Departmental Auditorium, Constitution Ave., N.W., Washington, D. C. Hallanan has been informed that Secretary of the Interior McKay would be available to meet with the Council then.

The chairmen of committees conducting studies on behalf of the Council, including, petroleum productive capacity, have been asked by Chairman Hallanan to submit reports at the May 28 meeting.

OHA of Maryland maps Spring Advertising

THE SPRING schedule of advertising of the Oil Heat Association of Maryland, Baltimore, has been formulated to include radio, newspaper and billboard displays. Five radio stations are being used, on four of which there are to be a series of one-minute announcements, spotted throughout the week during the months of March, April and May. In addition, the Association is sponsoring a newscast from 5:55 to 6:00 P.M. on Mondays, Wednesdays



"Tells a man what he's getting"

A BUSY FARM CUSTOMER TELLS ATLANTIC WHAT HE LIKES ABOUT RED SEAL PRINT-O-METERS

Print-O-Meter tickets and dual metering are two of the many big features Atlantic Refining Company built into their new one-stop farm service trucks. Said pleased customer Harry Erwin: "I see it in black and white, and I've got a record for taxes. And I don't even have to be on hand. I like your having separate tanks and hoses for gasoline and oil, too. There's no chance of any gasoline or tractor fuels getting in a kerosene or fuel oil tank that way."

These Red Seal features can help boost your farm market, too. You'll find bonus features that your drivers will like also. For instance, the easy-to-set, time-saving Auto-Stop, and the single reset-and-print handle.

Your maintenance men will like the way Red Seals meet sealers' tests time after time, without need for fussy accuracy adjustments. They'll like Red Seal's compactness, easy accessibility, light weight and the trouble-free, easy-to-service registers.

All these Red Seal features add up to greater satisfaction and profits all along the line. For new trucks, replacements, and bulk plants too, there's no finer selection of meters. Get the details from your Neptune jobber or branch now.

RED® SEAL METERS

NEPTUNE METER COMPANY
50 West 50th Street • New York 20, N. Y.

Branch Offices

ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER • LOS ANGELES • LOUISVILLE • NO. KANSAS CITY, MO.
PHILADELPHIA • SAN FRANCISCO • PORTLAND, ORE. • Canadian Factory: TORONTO 14, ONT.

DISTINGUISHED *for Sustained Accuracy and Low Maintenance*

and Fridays over station WFBR from March 9 to May 15.

Outdoor advertising, which has been used successfully in past years, again is included in this year's campaign. During March there were a total of 32 posters displayed, to be followed by 60 in April and another 60 in May.

Rounding out the program promoting oilheating are newspaper advertisements. Nine half page insertions, three each in March, April and May, are scheduled for the *Evening* and *Morning Sun* and the *News-Post*. Then, in the *Evening* and *Morning Sun*, a group of 32 75-line back page advertisements commenced on April 2 and 3 and are scheduled to run each Tuesday, Wednesday, Thursday and Friday thereafter until May 29.

South Carolina oil Jobbers ready for convention Cruise

THE ANNUAL SUMMER MEETING of the South Carolina Oil Jobbers Association, Columbia, S. C., is to be held during a convention cruise aboard the SS Silver Star. The steamship sails from Charleston, S. C. on June 25, makes stops on June 27 at Nassau and June 29 at Havana, thence returning to Charleston at noon on July 1.

Convention sessions are scheduled to be held aboard the ship, with morning and afternoon sessions on June 26; morning and afternoon sessions on June 30. The rest of the time will be devoted to recreational and social activities aboard ship and shore excursions for those who desire to make them.

W. L. Heinz, secretary of the Association, explains that the convention cruise has been arranged for by the United States Travel Agency, Inc., Washington, D. C., sole agent for handling reservations. The SS Silver Star is completely airconditioned, has a wide expanse of sports decks, a swimming pool and a number of public rooms for meetings. The ship is to be used as a hotel in Nassau and Havana and all meals will be provided.

Prof. Magoun speaks again at Massachusetts Meeting

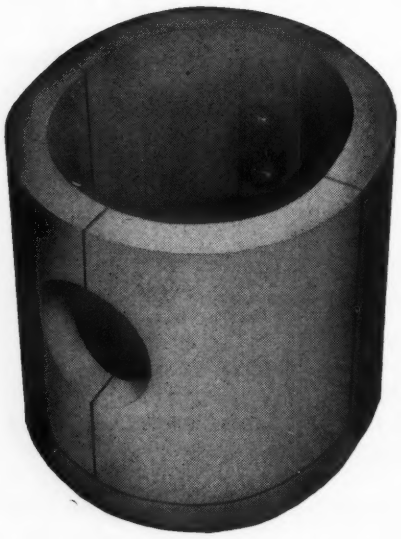
THE REGULAR monthly meeting of the Massachusetts Oil Heating Association, Inc., took place March 17 at the Hampton Court Hotel, Brookline, Mass., and featured Prof. F. Alexander Magoun. The professor was asked to return by many of the dealers who had heard him address a previous meeting of the association.

Holding degrees from M.I.T. and Harvard and a member of the board of directors of the Society for Advancement of Management, Prof. Magoun discoursed on "A Look inside the Customer," developing the theme that personality and success go hand in hand and that a salesman's success with a prospect often depends upon his understanding of the functions of personality.

Help your Legislator help You, Kansas City oil Men are told

CLAREL B. MAPES, managing director, Mid-Continent Oil and Gas Association, Tulsa, Okla., addressed the March meeting of the Oil Men's Club of Kansas City, Mo. He told them that if business men expect their legislators

Do Your PRESENT PRECAST CHAMBERS Give You ALL these Advantages?



1. Low initial cost.
2. Low installation cost — only 5 pieces to assemble.
3. K-factor equal to insulating brick.
4. Excellent performance with either high or low pressure burners.
5. Scientifically packed to prevent breakage.

. . . if the answer is NO -- contact us NOW!

KOLB REFRACTORIES COMPANY
Meadow & Jackson Sts.
Philadelphia, Penna.

KolbKast Insulated Chambers

Hot Tip for Cold Weather PROFITS

TORIDHEET

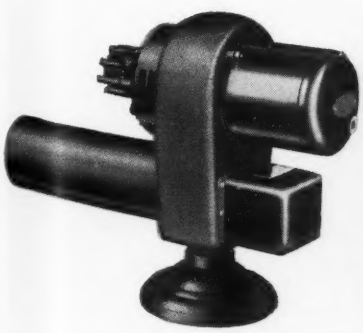
Pressure-Type Oil Burners

● So quick and easy to install you don't have to wait for warm weather. Pressed steel housing makes it light enough for one man to handle easily, saves freight expenses, too.

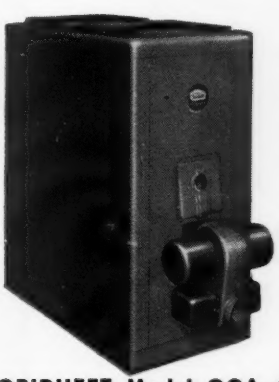
Features your customers will like include: pre-metered air flow; complete absence of exposed gears, buttons or levers; and, above all, famous TORIDHEET reliability of operation, developed from 28 years of pioneering research.

Sell TORIDHEET and take pride in selling a product that sells easily and *stays sold.*

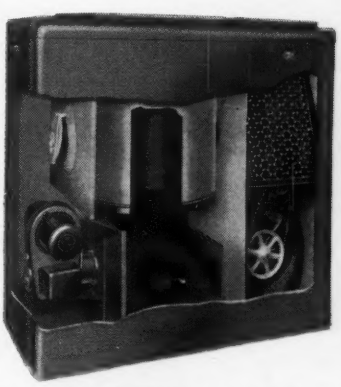
TORIDHEET Model J gun-type conversion unit. Capacity ¾ to 3 gal. per hour. An ideal unit for small to medium-large homes.



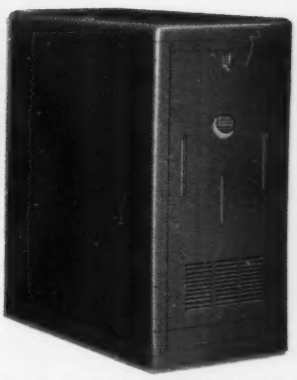
TORIDHEET Model L gun-type conversion unit. Capacity 2½ to 6 gal. per hour. Consistent performance for large residential and light commercial uses.



TORIDHEET Model OGA-65 low cost gun-fired winter air conditioning units specially designed for today's small homes.



TORIDHEET Model OGA gun-fired winter air conditioners provide clean automatic heating comfort for medium and large sized homes.



TORIDHEET Model OGU Boilers—ideal for radiant panel heating.

Other Toridheet units for every need... every budget... Gun Burners... Gun Fired Boilers and Furnaces... Gas Conversion Burners and Gas Fired Furnaces

CLEVELAND Toridheet AUTOMATIC HEATING

TORIDHEET DIVISION
CLEVELAND STEEL PRODUCTS CORPORATION
7306 Madison Avenue Cleveland 2, Ohio

Affiliated Canadian Manufacturers: Conroy Mfg. Company, Ltd., Catherine St., St. Catherines, Ont.

fueloil & oilheat

to fight their battles in the legislature they have a duty to arm him for the struggle. The legislator may be an expert in his own line, he continued, but he probably knows little about the oil business. Hence, oil men take great risks when they let legislative bodies pass laws affecting their business without the benefit of oil men's experience.

"Never forget," he said, "a bad law can cost you your job or your business. So . . . see to it that your legislator not only understands bills that affect you, but also understands your business problems generally." In general, the legislator must rely upon his constituents for information and advice. "Too many of us forget," emphasized Mapes, "that a new law can be passed only if we as citizens let it pass."

Air Pollution Meeting to be held in Baltimore

THE ANNUAL MEETING of the Air Pollution Control Association, Pittsburgh 13, Pa., is scheduled for May 25 to 28 at the Lord Baltimore Hotel, Baltimore, Md. The meeting will begin with a luncheon, followed by a boat trip along the harbor front to observe the progress made by the city's industry in curbing smoke and other forms of air pollution.

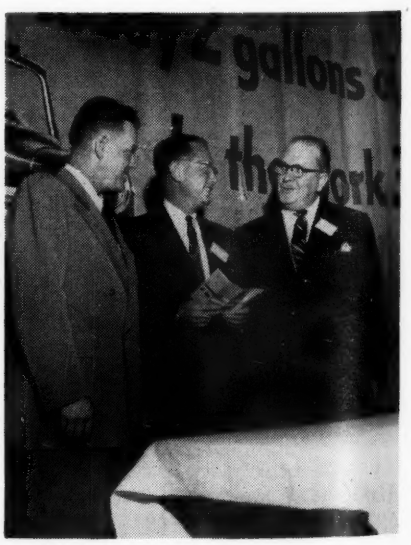
The technical papers to be presented will cover a variety of topics, including a number on coal and oil.

IPAA names Bryan as director of Information

LYMAN L. BRYAN has been named director of information in the Washington, D. C., office of the Independent Petroleum Association of America. Prior to this appointment he had been engaged in public relations work with Pan American Refining Corp. and more recently with the National Cotton Council.

Rochester, N. Y., Institute elects Slate of Officers

THE BOARD OF DIRECTORS of the Oil Heat Institute of Rochester, N. Y., met recently and elected Samuel Lipani, as president, succeeding W. W. Gordon, who has held the post for



Stanton K. Smith, *national chairman, Oil Industry Information Committee, center, is shown discussing the* OIIC *program with A. V. Fraser,* OIIC *district vice-chairman, left, and A. D. Eubank, district chairman of the Missouri-Iowa-Nebraska District, during the annual convention of the Iowa Independent Oil Jobbers Association, held in Des Moines on February 18 where Smith was a principal speaker.*

"Dodge topped everything else I tried"

. . . says **DAVID RICH**, *North End Coal Co., Inc.,*
Bridgeport, Connecticut

Why DODGE *"Job-Rated"* TRUCKS earn *plenty* for fuel-oil dealers

GREATER PAYLOAD CAPACITIES!

New 2½- through 4-ton Dodge *"Job-Rated"* trucks now shoulder up to 1000 pounds more payload! That's money-making news for the fuel-oil business! Bigger Dodge payload capacities mean more oil deliveries on *ONE* trip . . . less unproductive, "back and forth" mileage.

NEW POWER—MORE VALUE!

Big husky engines, from 100 to 171 horsepower . . . including 3 brand-new power plants . . . give Dodge trucks more muscle, more hustle. Other new features include increased piston displacements, greater engine-cooling capacities, advanced brakes and larger exhaust systems. Dodge-Tint glass and twin carburetion and exhaust systems are available. Drop in and meet your friendly Dodge dealer soon. He's a specialist at lowering hauling costs.

"I've been in the coal and fuel-oil business for 33 years and I've used a great many different trucks. But I didn't know how good a truck could be until we began to operate the Dodge.

"Residential deliveries call for good maneuverability. I bought the Dodge truck because it topped everything else I tried out in this respect. The big surprise came, however, after we really used the Dodge. These Dodge trucks are built to give the driver the best ride in the business.

"I'll string along with Dodge as long as they keep putting out trucks as good as my latest unit."

DODGE
"Job-Rated" TRUCKS

fuel oil & oil heat

three years. Other officers named: Arthur Poole, vice-president; Norman Miller, treasurer; Irving Koval, secretary.

State-Wide gas Codes Needed speaker tells OHA of Maryland

RODERICK STEPHENS, industry consultant and expert on the hazards of high pressure natural gas transmission, was guest speaker at the general meeting of the Oil Heat Association of Maryland, Inc., Baltimore 1, Md., held at the Hotel Stafford, February 17.

Stephens spoke on the need for state-wide gas regulatory codes in the interest of public safety. Stephens has been largely responsible for the adoption of such codes in New York, New Jersey and several of the New England states.

❖

Donald J. Hughes, formerly export advertising assistant, has been made assistant advertising manager, Eastern Div., Tide Water Associated Oil Co., New York, N. Y.

Ralph E. Knowles has been appointed division manager of Emerson Electric's United States Electrical Tool Div., Cincinnati 14, Ohio. The Division was acquired by Emerson last November. Knowles, who has been with the company for 35 years, succeeds Harry C. Levenson, resigned.

Thomas L. Conlon is representing Jackson & Church Co., Saginaw, Mich., in the Detroit area. Operating from his home in Royal Oak, Mich., Conlon, who has been associated with the heating industry and allied fields during the past several years, will represent the company's complete line of suspension and floor model furnaces.

Irving Melnick has been appointed general sales manager, Altherm, Inc., New York 21, N. Y. He previously was with the firm of Herske & Timmis, Inc. Altherm represents Copper Convectors, Standard Fin-Pipe Radiator Corp., Chicago Steel Furnace Co., Bock Corp., Turb-O-Tube Furnace Co., Circle Air Convectors and C. E. Squires Co. (Steam Specialties).

L. F. Blough has been named vice-president in charge of all control sales for White-Rodgers Electric Co., St. Louis, Mo., except clothes dryer control sales. *R. A. Sherer* at the same time was advanced to the position of sales manager.

L. E. Ulrope, vice-president and director of marketing, Esso Standard Oil Co., New York 19, N. Y., on March 11 marked his 40th anniversary with the company. Ulrope joined the company as a delivery boy in Newark, N. J., has been a vice-president since 1948 and has held virtually every key sales position in the organization. He is a former president of Colonial Beacon Oil Co. and a director of Standard Oil Co. of Pa., both of which have since been merged with Esso Standard.

Oscar A. Pratt is production control manager and *F. H. Harl* is superintendent of Main Plant Production, Evans Products Co., Plymouth, Mich. Both are to function under the direction of E. W. Marchand, vice-president in charge of operation.

CENTURY'S *complete* gas and oil line brings 'em in -- sells 'em -- keeps 'em sold!

People want to choose from a complete line they *know* and *trust* — CENTURY. Choose the 40-model gas and oil line that *closes more* sales, *makes more* sales, *creates more satisfied* customers—CENTURY.

TWO HIGHLIGHTS FROM CENTURY'S COMPLETE NEW LINE

The exclusive, Century Air Washer-Humidifier for automatic, exact, "living-room control" of humidity. Fits most manufacturers' basement models. Available on new Century Lo-boy units. (6 models gas — 8 models oil.)

New Century Counterflow permits installation flush at sides and rear, giving *zero* clearance! May be used even on combustible floors. Approved by A. G. A. and Underwriters' Laboratories Inc. It's another Century first! (4 models gas—4 models oil.)

APPROVED FOR ZERO CLEARANCE

CENTURY ENGINEERING CORPORATION, Cedar Rapids, Iowa

Century

• • • MANUFACTURERS OF FINE AUTOMATIC HEATING FOR 27 YEARS

CLIP COUPON FOR DETAILS OF COMPLETE LINE.

CENTURY ENGINEERING CORP. 416 Third St. Cedar Rapids, Iowa

Please send me further details on: (check below)

☐ Air Washer-Humidifier
☐ Gas Hi-boys
☐ Gas Lo-boys
☐ Gas Counterflow
☐ Gas Conversion Burners
☐ Hot Water Boilers
☐ Oil Hi-boys
☐ Oil Lo-boys
☐ Oil Counterflow
☐ Oil Conversion Burners

Name_____

Address_____

City_____ State_____

"I like it so well I'm installing one on every burner we sell"

—says George Shephard, Pacific Utilities Co., Seattle, about the Honeywell Delayed-Opening Oil Valve

George Shephard, right, Pacific Utilities Company, talking to Honeywell sales engineer Ken Fitzgerald

"When Honeywell first introduced this new valve we decided to place five or six out on trial—before committing ourselves.

"So we placed them in the homes of some of our older customers.

"The results from those first few trial runs went far beyond our greatest expectations. Every single installation showed a marked improvement. The starts were quieter, smoother, and more positive. Pulsation and fluttering of the flame were entirely eliminated. The whole operation was so clean and so 'dribble-free,' that conditions which had been bothering us for years were entirely eliminated.

"We are sure that the *net long-time results* we will achieve by using this remarkable little valve . . . will result in many more satisfied customers and many more sales."

* * *

George Shephard manages the heating division of the Pacific Utilities Company in Seattle, Washington. He knows his burners and he likes the V4001 Delayed Action Oil Valve so well, he's installing one on every oil burner his company sells!

Another Plus-Profit Product from Honeywell!

Be sure—always specify a Honeywell Delayed-Opening Oil Valve on your burner jobs!

Virtually eliminates smoke on oil burner starts and stops. Adds cleanliness, boosts efficiency, reduces need for service calls, decreases customers' fuel bills. Can be installed quickly on existing high pressure oil burners. For complete information on this valve—or on the Honeywell V5000 *Dribble-Proof* Oil Valve—call your local Honeywell office. Or write Honeywell, Dept. FH-4-38, Minneapolis 8, Minnesota.

MINNEAPOLIS **Honeywell**

First in Controls

fuel oil & oil heat

Manufacturers' Activities

Airtemp alphabet Book sells Airconditioning

ALPHABET FUN from Chrysler Airtemp is the title of a booklet prepared to tell the merits of airconditioning using alphabet and verse. The book stars "Mr. Comfort Zone," the symbol adopted to identify Airtemp airconditioning, with each page being devoted to a letter of the alphabet and accompanying verse to point up comfort, cleanliness and other features of the company's summer cooling equipment. The symbol also is reproduced on each page.

V. P. Black, vice-president, Grant Advertising, Inc., who prepared the booklet for Airtemp, explains its origin. "In planning the 1953 Airtemp consumer advertising, we felt that our basic appeal should be directed toward the home—that is, the woman. We felt that trying to talk in technical terms about the equipment would be a mistake and that perhaps we should portray the benefits of airconditioning very simply, and one at a time. For attention value we chose the alphabet and verse type of approach. When we had produced a sufficient amount to cover the necessary advertisements for the consumer publications, it looked like a good idea to complete it for the remaining letters in the alphabet and put the entire series of verses into a book for children. And, of course, we offered it in the coupon of the consumer advertisement."

Immediate response to the book,

Here's the system *devised by Decker Bros., Hawthorne, N. J., to facilitate delivery of a new tank truck to a fuel-oil dealer as much as 1,000 miles away. Starting out from Decker's shop in New Jersey, the delivery driver takes with him what he needs to get back—that's the return-trip Crosley hooked on the back of the fueloil truck in the photograph. Decker Bros. has found that using rigs like this for delivering their completely packaged fueloil trucks often results in the purchaser realizing a substantial saving.*

Darling it's so exciting . . .

I just can't wait

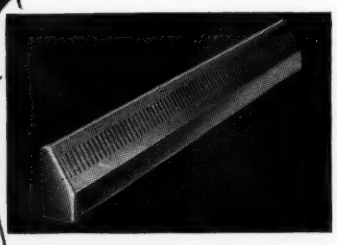
to see those sensational, new

STANDFORATED

Perimeter Baseboard Registers

WITH SLIDING DAMPER CONTROL

Write Now for Your Free Copy of Standard's Amazing New Pocket Catalog



- Used in homes, schools, churches and commercial installations.
- Comes in four foot sections.
- Simplifies balancing of heating systems.
- Fabricated of 20 gauge steel.
- Finished with Prime Coat only—special finishes on request.

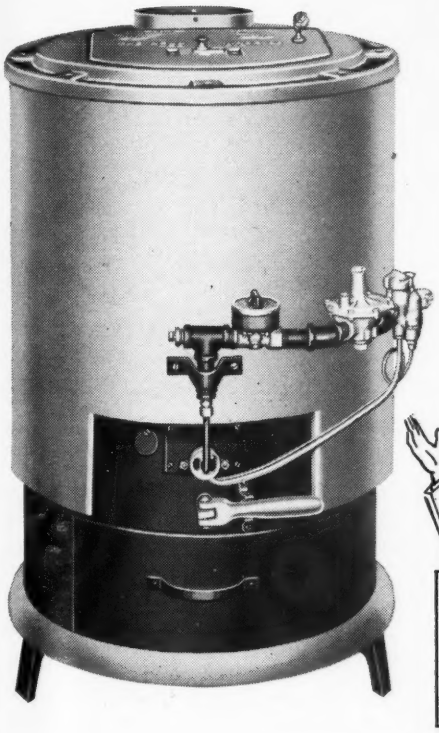
Standard Stamping & Perforating Co.

3119 WEST 49th PLACE, CHICAGO 32, ILLINOIS

Luxaire®

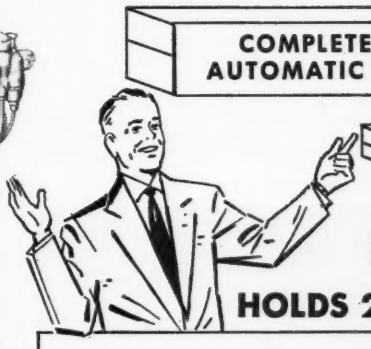
4 in 1 INCINERATOR

ANOTHER LUXAIRE "YEAR-ROUND" BUSINESS BUILDER



View of Incinerator equipped with 12,000 B. T. U. Input Gas Burner for complete, automatic gas operation.

1 Gasless Model
with
3 Burner Combinations



4 Choices

HOLDS 2 BUSHELS OF BURNABLE TRASH!

Gasless Model is Factory Assembled Ready for Quick, Easy Attachment of ANY of the 3 Types of Burners.

ODORLESS... NOISELESS... SAFE... SANITARY
HEAVY CAST IRON and STEEL CONSTRUCTION

A year-'round sales getter that's simple to order . . . simple to handle . . . simple to install. Every home—old and new is a prospect.

Can be installed in basement, utility room and places with combustible floors. Compare feature for feature and you'll see why Luxaire Incinerators give you the biggest selling features. Constructed from top to bottom of durable, rugged cast iron and steel—easy to keep clean baked enameled casing — they're built for years of heavy duty operation.

Get complete details today from your Luxaire jobber on one of the fastest selling products ever offered—the Luxaire 4 in 1 Incinerator.

Approved by A. G. A. for Natural, Manufactured and Mixed Gases.

THE Luxaire C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

fueloil & oilheat

which tells in non-technical terms of the features of Airtemp cooling equipment, says Mr. Black, "has been very pleasing."

Heil Co. Team lampoons company sales Meetings

AT THE FEBRUARY MEETING of the Chicago Sales Executive's Club a team of Heil Co., Milwaukee, Wis., sales department personnel in four farcical skits pointed up the "don'ts" to avoid when presenting a company sales meeting. Four serious talks followed to portray the correct methods of handling such meetings.

Heil Co. *sales personnel participating in "The Care and Feeding of sales Meetings" presentation. Left to right are: Messrs. Siefert; Zwanzig; Matheson, Jr.; Stoller; Sanders; Imse, Heil, Jr.; Fricker; Hanley and Johnson.*

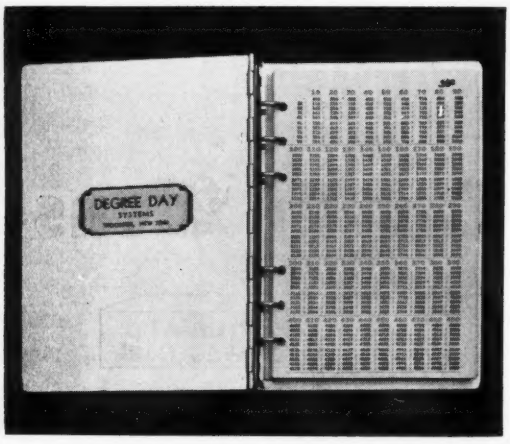
These 5-minute discussion periods were moderated by John Barclay, Heil general sales manager, and presented by Mike Carlson, bodies and hoists sales manager; George Hochstein, sales manager, Heil Automatic Htg. Div.; Paul Miller, road machinery sales manager.

Members who took part in the skit include: Harlan Stoller, export sales manager; Fred Zwanzig, field service manager; Don Fricker, advertising manager; Joe Heil, Jr., sales representative; Bill Matheson, Jr., Heating Div.; Gilbert Imse, Tank Div.; Ken Sanders, market research; Ken Johnson and Bill Siefert, advertising department and Morris Hanley, export division.

The skit and panel discussion first were presented before the Milwaukee Sales Manager's Association in January and invitations have been received from other groups. Both the Rockford, Ill., Sales Manager's Club and the Milwaukee Industrial Marketing Association have scheduled appearances of the team.

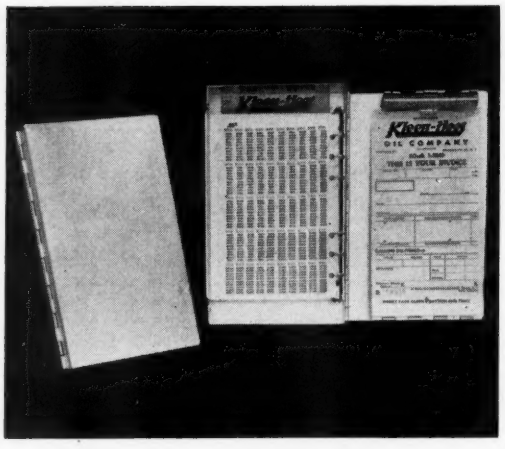
Hold-Tite moves sales Office, names Canadian Reps.

REMOVAL of its sales office to 550 Fifth Ave., New York 36, N. Y., has been announced by Hold-Tite Valve Co. At the same time Herbert Cowan of

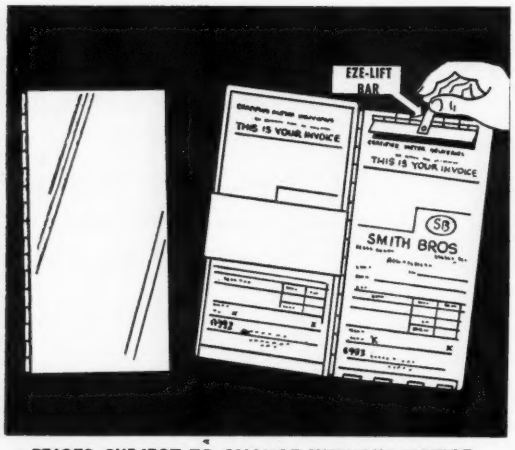


FUEL OIL CALCULATOR
POCKET EDITION
PRICE CARDS
1 Card—$1.00
2 Cards— .50 Each
3 Cards or More—Only 35c each
ONE RATE ON A CARD. CAN SUPPLY ANY RATE FROM .07 TO .30 IN 1/10c STEPS ONLY.
EACH CARD SHOWS 1 TO 999 GALLONS
Gallons show in RED ink and dollars and cents in BLACK.
ALSO AVAILABLE:
1%—2% and 3% Sales Tax Cards.
All Cards Are Plastic Laminated.
RING BINDERS
Ring Binders each $2.50
Made of DURALUMINUM Metal
"For use on fuel oil trucks or in office."

DURALUMINUM
COMBINATION METER TICKET and PRICE CARD HOLDER No. 600
PRICE $5.00 FOR HOLDER
Any price or Sales Tax Card when bought and shipped with this holder is billed at only 35c each.



HOLDERS NO. 600 AND 4723 HAVE
EZE-LIFT BAR
Stops Breaking of Fingernails
BOTH HOLDERS FOR TICKET SIZE 4⅛" x 7¾".



DURALUMINUM
DELIVERY TICKET HOLDER
NO. 4723
PRICE—ONLY $3.50 EACH

ALSO AVAILABLE ARE HOLDERS for
Driver's Cards (3 Hole Type)
Driver's Daily Report
Burner Servicemen's Reports
Burner Service Books, Etc.

DEGREE DAY SYSTEMS
39-30 58th St. Woodside, N. Y.
TWining 8-6666

PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

OIL COMPANIES STEP UP DELIVERIES WITH WHITE 3000

LEADERS in the fuel oil industry from coast to coast report *more* deliveries, in *less* time, at *lower* cost with the White 3000, tailored to their exact working conditions.

EXTRA-CARRYING CAPACITY—White 3000 design permits extra-capacity tankers without increasing over-all length. Longer routes . . . more deliveries.

SAVES DRIVER TIME—Outstanding maneuverability saves time in every element of delivery service. Wider-tread front axle, shorter turning radius and short wheelbase are White 3000 advantages.

POWER-LIFT CAB—Substantial maintenance savings because of complete front-end accessibility . . . instantly.

SAFETY AND VISIBILITY—Other exclusive driver features make it tomorrow's truck . . . today, for *your* business.

See your White Representative for facts.

HERE'S 2100 GALLON WHITE 3000 TANKER IN FUEL OIL SERVICE

This Model 3018T boosts fuel-oil deliveries in Philadelphia's "Main Line" District for Lansdowne Ice & Coal Co. Tank holds 2100 gallons of #2 fuel oil, permitting longer routes and more deliveries per work day. "Ideal for fuel oil service," Lansdowne reports.

White

FOR MORE THAN 50 YEARS

THE GREATEST NAME IN TRUCKS

THE WHITE MOTOR COMPANY
Cleveland 1, Ohio

fueloil & oilheat

Hold-Tite announced the appointment of two Canadian representatives.

The Heating Equipment Co., Winnipeg, Canada, Irving Grosney, manager, is handling Hold-Tite products in Alberta, Saskatchewan and Manitoba; Ontor Laboratories, Toronto, Charles Elder, manager, is functioning in a similar capacity in eastern Canada and the Maritime Provinces. Ontor is supervising the display of the Hold-Tite line in the Canadian National Oil Heat Show, which was held in Toronto on March 30 and 31.

Melvin Pine & Co., New York, Fran Milligan in charge, has been named representative for all other foreign sales of Hold-Tite products.

Form Robot Auto-Heat in Middletown, Conn.

THE SALE of The Auto-Heat Corp. of Middletown, Conn., has been announced, simultaneously with the announcement of the formation of The Robot Auto-Heat Corp. Otto Moody, old-time burner manufacturer, who owned the Auto-Heat Corp., sold his interest, remains as sales manager. He is also an equal stockholder in the new corporation.

Incorporators and officers of the Robot Auto-Heat Corp. are: George Guite, president; William Christians, vice-president; Ernest Leonard, treasurer and Andrew Jensen, secretary. These men also operate the Supreme Tool and Die Co., Hartford, Conn.

In addition to Auto-Heat's regular line of burners and units, the new company is adding two new burners, three larger size winter air conditioners, two boiler-burner units and a furnace built especially for installation in moderately-priced homes. The initial concentration of sales activity will be centered in the New York and New England areas.

Perfex Controls now made in Iron Mountain Factory

THE CONTROLS MFG. division of the Perfex Corp., formerly located at its main plant in Milwaukee, Wis., has begun operations from Iron Mountain, Mich. The Controls sales, advertising, accounting and engineering department are to remain in Milwaukee and Perfex also will continue to maintain all of its branch offices, including the one in Milwaukee. The Iron Mountain set-up will include the manufacturing, service and order departments.

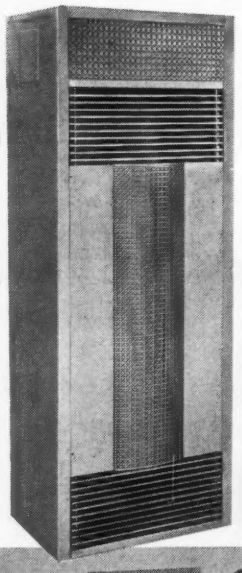
The main Perfex plant in Milwaukee will be occupied entirely now by the Perfex Radiator division to produce industrial engine radiators, intercoolers and aftercoolers. Aircraft controls are manufactured at Milwaukee in Plant No. 2, which also houses the Perfex Color Printing division. Plans call for the moving of the aircraft operation to Iron Mountain later this spring.

Central region Men meet for Iron Fireman Conference

IRON FIREMAN dealers from the company's central region met in Chicago on February 13 and 14 for a conference on equipment, application engineering and sales plans. E. W. Jones, manager of the firm's Chicago retail branch, acted as host to the 225 dealers who attended.

H.C. Little

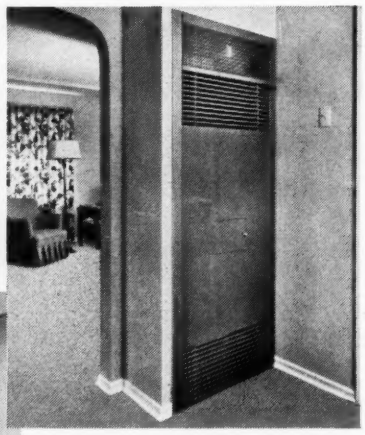
oil wall furnaces break sales records!

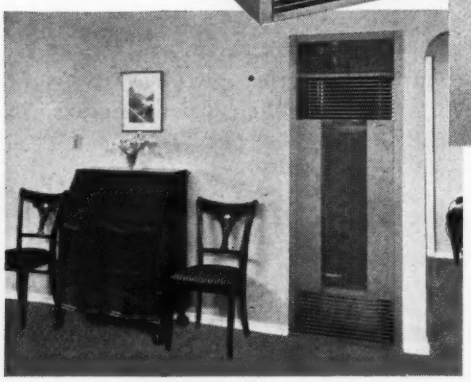


H. C. Little No. 85 Dual Wall Furnace for installation with brick chimney or patent flue. 65,000 BTU/hr. output. (Model No. 60, with 40,000 BTU/hr. output, also available).

Living room side of furnace (below) has large vertical radiant panel, plus return-air-intake and warm-air-output grilles. Back of unit (see hall view, right) also has intake and output grilles.

You ought to find out what they can do to boost sales for YOU! From New York to Seattle they're breaking all sales records—the "hottest" furnace on the market today!





COMPACT DESIGN—
COMPLETE FACTORY ASSEMBLY—
EASY INSTALLATION—
NO HEAT DUCTS NEEDED—
SILENT BURNER—No moving parts—
100% AUTOMATIC OPERATION—

Protected dealer franchises available. Write Dept. F-4

DISTRIBUTORS IN 18 PRINCIPAL CITIES—WAREHOUSE STOCKS IN KEY DISTRIBUTING AREAS

H.C. Little Burner Company, Inc.

25th Anniversary H.C. Little Burner Co. Inc.

Head Office: San Rafael, California

Announcing!

NEW Furnace Oil Inhibitor

Dispersant FO

- **Reduces, even ends filter screen and nozzle deposits**
- **Inhibits rust in storage tanks and lines**
- **Easy to add *at any temperature*—in storage or truck tank**
- **Eliminates many costly home service calls**
- **Provides competitive advantages**
- **Economical—1 pint/1000 gallons**

This new liquid Furnace Oil Additive, when added to your home heating oil stock, will give you a better product with many competitive advantages. Because Dispersant FO will help keep home heating systems clean and trouble free, your customers will prefer your furnace oil, and your service calls will be reduced. It's easy and economical to add Dispersant FO to your storage tank or when filling your truck tank. Just add 1 pt. to every 1000 gallons. This new Oronite product not only checks formation of screen-clogging gums but also inhibits rust and corrosion in tanks and pipes.

Write or phone the Oronite office nearest you for complete details and assistance.

ORONITE CHEMICAL COMPANY

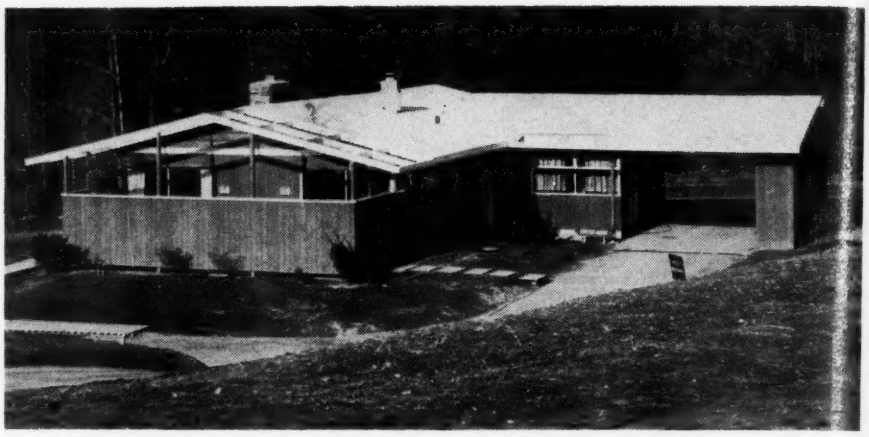
38 SANSOME STREET, SAN FRANCISCO 4, CALIFORNIA
30 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK
STANDARD OIL BLDG., LOS ANGELES 15, CALIFORNIA
600 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS
MERCANTILE SECURITIES BUILDING, DALLAS 1, TEXAS

ORONITE CHEMICAL COMPANY
THE NAME TO WATCH IN CHEMICALS

2753

All types of Iron Fireman equipment were on display and discussed during the meeting. E. C. Webb, vice-president, engineering and production, placed special emphasis on a new forced draft package unit and its application as a conversion burner to existing boilers.

Oilfired domestic furnaces were covered by S. H. Beach, industrial sales manager; C. T. Burg, vice president, sales, outlined methods of securing prospects for all types of equipment under current marketing conditions.

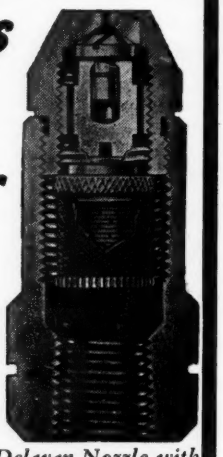


Nozzle TIPS

Use the NOZZLE Preferred by Burner Manufacturers

102 leading manufacturers use DELAVAN NOZZLES . . .

as original equipment. Their choice of Delavan is based on tests made IN THEIR OWN laboratories and their field experience. They have found that Delavan Nozzles can be depended on for accuracy of rating, spray quality and top performance.



Delavan Nozzle with Hally Filter attached.

"IT PAYS TO USE DELAVAN NOZZLES"

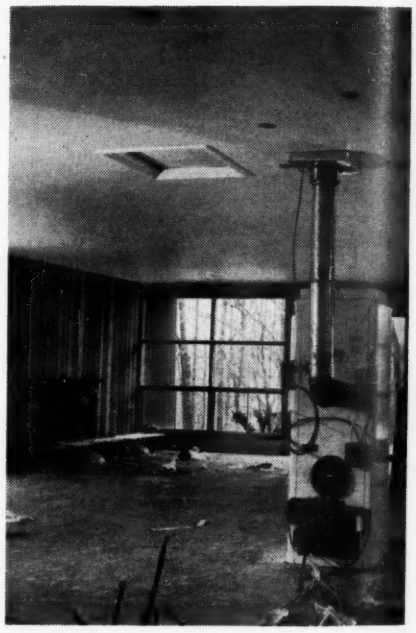
Controlled spray testing of every Delavan Nozzle is YOUR guarantee of better oil burner performance. Nozzle selection is easy because the capacity, type and spray angle are clearly marked on the top of each individual dust-tight nozzle container.

WRITE FOR CATALOG 148

Dust-tight Nozzle Carton.

DELAVAN MANUFACTURING CO.

3009 SIXTH AVE., DES MOINES 13, IOWA



Two shots *of the National Association of Home Builders' Trade Secrets House, one an exterior view, the other showing a York-Heat oilfired, Down-Flow unit being installed for the home's perimeter heating system. Builders in every state have ordered plans of this house. The one pictured is being built by Arters Construction Co., Media, Pa., one of more than 127 such houses being planned by builders across the nation.*

G-E inaugurates Training for cooling Organization

A TRAINING PROGRAM for its dealer and distributor organization has been undertaken by the Home Heating and Cooling Dept., General Electric Co., Bloomfield, N. J. Initially the two-day course will be held at the factory, but in time it is to be taken into the field for the widest possible coverage.

The course includes such subjects as house construction, how to make a

DIAL 4-9271

HART HEAT

DIVISION AVERY FARM MACHINERY CO.

2006 South Washington Street

PEORIA, ILLINOIS

Mr. A. G. Winkler,
c/o Fuel Oil & Oil Heat,
New York 36, N. Y.

Dear Art:

The big broadside about your April Directory Issue has arrived. I know from what happened at the A.S.H. & V.E. Exposition in Chicago in January, that the field is ready for what we exhibited there. Please insert any part or all of this letter that you can get on a one page space as a message from the Hart (heart). That dead-line of the 25th leaves no time for fancy cuts.

Our reception there was something unheard or undreamed of. Some of the best thinkers in the business labeled it "a definite contribution to the industry" and many recognized engineers walked away wondering if what they had seen and heard was really true.

The conditions were the worst imaginable under which to demonstrate a flame. Down-draft of .03 to .08 and once in a while .150, but it did not stop us from smooth igniting or burning. On Monday when we burned the HCM-SF on the .150 positive draft, and opened the inspection door, that .85 fire came right out into the room, but it stayed lit and clean and steady without any ignition and when you closed the inspection door, it would push its way back up that stack without the least murmur. No auxiliary venting either.

We wanted to demonstrate pulsationless operation with instruments, so the down-draft conditions were ideal for our purpose. The actual orders taken at the booth, is plenty of proof to us, that it also was what the men who know the business, wanted to see and when they did they bought.

I couldn't talk at all by the end of the week, and another old timer I had with me—Bryan Wright—could only whisper, but he had the time of his life. He finally got his hands on a perfect, clean, soft, lazy oil flame he could abuse and kick around to his heart's desire without upsetting it or the CO_2 reading. Incidentally Bryan is a "master" low-pressure man of 30 years standing, he admitted he had never seen the equal of "Supra Flame" for smaller fires.

This first public showing of our exclusive "Supra Flame" Combustion Head covers the range of 0.65 to 1.65 GPH inclusive. We've been using it since 1949. We knew it was good, but that show fired us up all over again.

I told every prospect that, "all you need is a real tough pulsating job somewhere—order a Supra Flame—put it in—if it didn't cure the pulsation, I'll take it back—refund your money after sixty days trial—no questions asked." This guarantee includes no sacrifice of CO_2 or noise and under minimum or zero draft conditions.

To all who saw our exhibit and who see this letter we say "thanks very much for stopping in to see us."

To those who only see this letter I want to add—"Get a hold of Hart if you want to enjoy your work of building a reputation as well as a nice bank balance."

I WILL GIVE ANY EXPERIENCED LEGITIMATE OIL HEATING MAN OR CONCERN A CRACK AT ONE BURNER AT THE SAME SPECIAL PRICE GIFT CERTIFICATE OFFER WE MADE TO THOSE ATTENDING THE SHOW, IF HE WILL GET IN TOUCH WITH ME DIRECT AT THE FACTORY BY COLLECT PHONE, TELEGRAM OR ON HIS LETTERHEAD BY MAY 15.

Cordially yours,

Smitty.

Earl K. Smith—Owner

HART HEAT / DIVISION
Avery Farm / Machinery Co.

comfort survey, calculation of heat loss and cooling load, equipment selection, proper layout of ductwork and other installation procedures. S. J. Levine, general manager of the Department, explains that the course was established to prvoide G-E dealers with all the latest information in equipment and application techniques to enable them to make efficent and reliable installations at the lowest costs.

C. M. toeLaer, application engineer for the Department, is in charge of the program.

Coastal Oil provides new promotional Plans

FOR THE seventh consecutive year Coastal Oil Co., Newark 2, N. J., is making available to its fueloil dealer customers a new set of sales and promotional plans. The program provides a tested selection of sales aids designed to help dealers hold and obtain the greatest possible share of customers. Included are fueloil agreements, collection letters, cellar cards and newspaper advertisements. Also, there is material to promote service and budget plans, new sales pieces in the field of equipment and "Corrective Heating."

The entire cost of preparing the program is borne by Coastal, the dealers being able to secure the selling aids for the cost of printing the number of pieces they require. Coastal's name or trademark is not used; instead the pieces are designed so that they promote only the dealer's name and selling message.

Zoned house Heating gains Favor, Honeywell Head says

REPORTING to the company's stockholders on 1952 operations, Harold W. Sweatt, president, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., revealed a growing trend to zoning for residential heating. He said the practice of dividing a house into two or more separately controlled heating areas "gained greatly in public favor in 1952 and we expect this trend to continue at an accelerating rate."

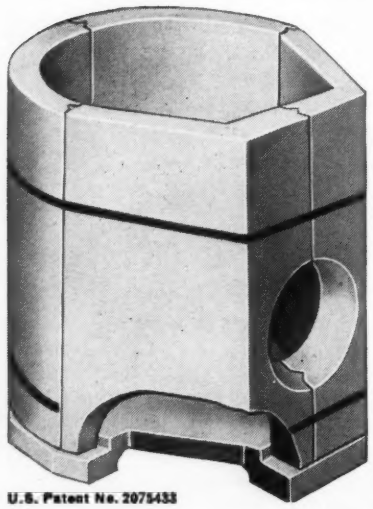
Sweatt disclosed also that Honeywell's electronic Moduflow control for

LITE • CAST
COMBUSTION CHAMBERS
QUICK HEAT LONG LIFE

PEAR
ROUND
SQUARE
MODERN

Monogram

HAS 137 STANDARD DESIGNS AND SIZES OF LITE • CAST INSULATING REFRACTORY COMBUSTION CHAMBERS FOR . . .
ALL BOILERS & FURNACES



U.S. Patent No. 2075433

TONGUE & GROOVE JOINTS
•
HIGHER SIDE WALLS
•
DOUBLE SEAL BETWEEN FLOOR AND WALLS
•
PRE-CAST FLOOR
•
AIR SPACE BENEATH FLOOR

4 SHAPES
•
25 SIZES
•
.75 to 12 G.P.H.

CLOSE TO ONE HALF MILLION INSTALLATIONS

COMPLETE PACKAGE INCLUDES: Combustion Chamber, Back Fill and Steel Bands.

STANDARD FOR 20 YEARS

MONOGRAM PRODUCTS CO., INC.
731 NORTH 35TH STREET • PHILADELPHIA 4, PENNA.

Oilheating men *in Southern waters: A catch of bonita, tuna, kingfish and a highly-prized sailfish is displayed by (left to right) Stan Czarnecki, Eddington Metal Specialty Co.; Mrs. Czarnecki; mate; Mrs. Clarence Dieter; Harold Wilkinson, Herco Oil Burner Co. (kneeling); Charter Boat Skipper Jim Poe, grandson of Edgar Allen Poe, and Clarence Dieter, an Old Timer. Photo was taken in Fort Lauderdale, Fla. on February 26.*

A fine line of OIL heating equipment by

Iron Fireman

offers new dealer opportunities

For winter warmth or summer cooling

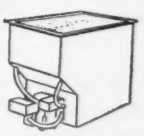
BOILERS, FURNACES, COOLING UNITS, CONVERSION BURNERS

The Iron Fireman franchise gives you a complete line under a single, nationally known name. Residential equipment covers every home heating need from small cottages to large homes—for all types of forced warm air systems, steam, hot water, or radiant panel heating. The fast heating, radiant oil burner is one of the most efficient conversion burners ever developed, even when installed in old-fashioned furnaces. This same burner, built into the handsome boiler burner and winter air conditioning units gives them exceptional fuel economy. These facts are amply supported by scientific tests as well as the fuel savings experienced in thousands of homes.

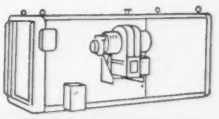
There is also commercial-industrial equipment in wide variety for use in schools, churches, commercial buildings, factories and many industrial applications. The Iron Fireman oil and oil-gas "package" unit comes ready to install in boilers up to 300 horsepower. It includes built-in forced draft and completely wired, factory tested, control panel.

CONVERSION BURNERS

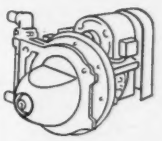
OIL FIRED FURNACES AND BOILERS



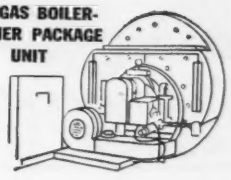
FLOOR AND WALL FURNACES



HORIZONTAL OIL FURNACE



HORIZONTAL ROTARY OIL BURNER



OIL-GAS BOILER-BURNER PACKAGE UNIT

Most complete franchise in the entire automatic heating field

1. The unique features and outstanding fuel economy built into the Iron Fireman oil equipment makes it easy to sell.
2. The Iron Fireman trademark, with 27 years of continuous national advertising and user satisfaction behind it, gives all Iron Fireman equipment exceptional salability.
3. Iron Fireman has a complete line of residential, commercial, and industrial oil burning equipment.
4. There's automatic equipment . . . a full line . . . for gas and coal too.
5. Iron Fireman dealers receive strong company backing which includes local advertising, merchandising, sales training, and engineering assistance.

Excellent territories available. Write for information to Iron Fireman Manufacturing Company, 3085 West 106th Street, Cleveland 11, Ohio

fuel oil & oil heat

home heating has passed through a satisfactory introductory period and would be promoted aggressively during 1953. Viewing the increased use of home airconditioning equipment, Sweatt described it as "one of the most significant developments of the year" and predicted that the sharp increase in sales of room units represents "an intermediate step that will accelerate the trend toward the broad use of complete home airconditioning systems."

The company's 1952 sales were about 23% greater than in 1951 and established an all-time high for the third consecutive year. Gains were recorded both by the Heating Controls and the Commercial Divisions.

Metromatic seeks Name for Metropac "Junior"

THE NEWEST ADDITION to its line, Metropac "Junior" — combining the features of a full sized warm air heating unit, incorporating a built-in, year 'round domestic hot water supply—is nameless, but Metromatic Mfg. Co., Everett, Mass., is taking steps to correct that. Announcing a contest, open to any principal or employee of a recognized heating dealer or contractor, the company is offering $500 in Savings Bonds for the best name for the new unit. The first prize consists of $300 in bonds, $150 for the second prize and $50 for the third.

Details on the unit that might help in selecting a name show that the "Junior" is designed for lower cost homes, is rated at 75,000 Btu/hr, is fired with a gun type oilburner and is equipped with a 30 gal. heavy-duty galvanized hot water tank with Magnadur rod to retard corrosion. Capable of being installed in an area measuring 6½ sq. ft., the unit stands 69" high and is shipped complete with a high temperature combustion chamber, air filters, heavily-insulated jacket and four controls.

Entries to be sent to Metromatic should be made out on the employing firm's letterhead, one to a sheet, and postmarked before May 30, 1953, when the contest closes. Metromatic will supply a "Name Wanted" folder on request for those who want more detailed information on the contest.

Kewanee-Ross opens Canadian Offices

KEWANEE-ROSS of Canada, Ltd. has been established at 57 Bloor St. West, Toronto, Canada. W. Bradford Russell is president of the firm and Richard N. Mathews has been elected vice-president.

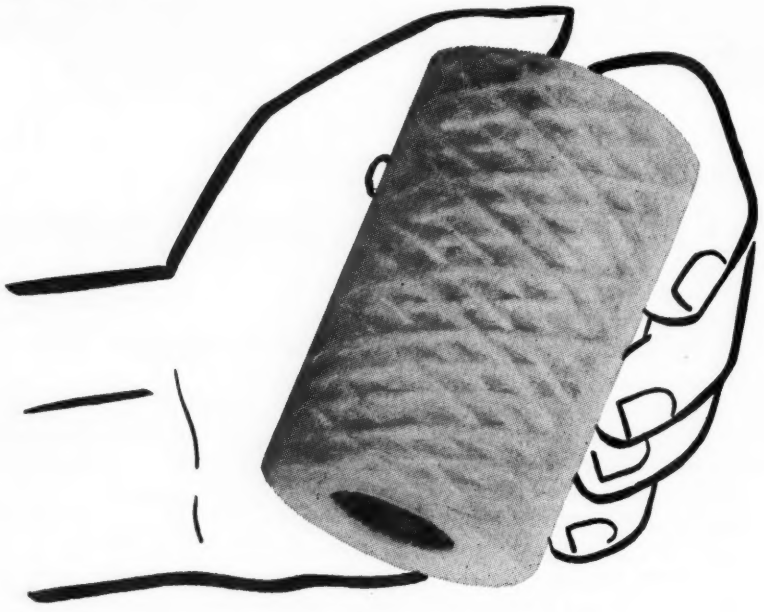
The company was organized to provide engineering and sales service to Canadian industry on shell and tube heat exchangers, coolers, condensers, steam jet ejectors and high pressure steam boilers. Ross exchangers will continue to be made by Horton Steel Works Ltd., Fort Erie, Ontario, as in the past, with engineering by Kewanee-Ross.

Insul-Lyte appoints management Personnel

JAMES R. CROSBY has been named general sales manager and E. N. Wash, general manager, of Insulating Castable Corp., River Rouge 18, Mich.,

PROVEN ***FIRST BY PERFORMANCE NOW BY DEMAND***

There are more *Fulflo Filters* on the oil burners of America than any other make . . .



Stock the filter brand that is ***proven*** *by demand!*

COMMERCIAL FILTERS CORPORATION
2 MAIN STREET, MELROSE 76, MASSACHUSETTS

more pay load in the tank means MORE DELIVERIES A DAY

HEIL

truck tanks are LIGHTWEIGHT!

Fuel oil delivery from distributing company storage tanks to homes and industry may be performed either with truck tanks like the Cruiser (top illustration) or with trailerized tanks (above).

WHATEVER YOU NEED IN A MONEY-MAKING TANK
Heil has it!

Whether you need "Trailerized" Tanks or Truck Tanks, Heil can recommend the exact model to meet your requirements, because Heil makes them all! Send for the latest illustrated bulletin today for details. It contains full information about the complete Heil line of Truck Tanks, including Cruiser Tanks for city delivery of fuel oil, gasoline, or both . . . Whippet Tanks for local delivery of fuel oil . . . and the Heil Meteor Jr. Tanks for either rural or city delivery. Write for Bulletin TT-52227 today.

T-3

WHEN you use Heil Truck Tanks, you're hauling pay load . . . not metal. And each additional daily delivery you can make is a *profit-load* for you, while you keep customers happy with faster service.

Heil tanks are designed for maximum weight saving. Box-section, longitudinal members open into the bucket box and serve both as hose carriers and support for the tank. Elimination of tie bands and heavy cross-bolster subframe construction saves more weight. Side cabinets and skirting are self-supporting and welded integrally to tank and longitudinal members forming a *one-piece* boltless construction. Ends and back walls of cabinets are welded to the tank structure to serve both as supporting members and enclosing cabinets.

When this one-piece, integrally welded design was first introduced by Heil, it saved 15% in dead weight while increasing beam strength and over-all durability. No wonder Heil Truck Tanks are first choice with so many profit-wise distributors!

THE HEIL CO.

Dept. 3943, 3039 West Montana St., Milwaukee 1, Wisconsin
Factories: Milwaukee, Wis. — Hillside, N. J.
Sales Offices: New York, Hillside, Washington, D. C., Atlanta, Cleveland, Milwaukee, Detroit, Chicago, Kansas City, Denver, Dallas, Los Angeles, Seattle; Rio de Janeiro, Brazil.

TRAILERIZED TRANSPORT TANKS • TRUCK TANKS • TRAINS • CHEMICAL TANKS

manufacturers of Insul-Lyte combustion chambers and other cast insulating shapes for use with oilfired heating equipment.

Crosby had previously been with Rex Roto Corp. as production manager and with Rex Clay Products as assistant sales manager. Wash previously had been associated with Sawyer Heating Co. as general manager and with OverHead Heaters, Inc., makers of suspended oilfired furnace units, as works manager.

Perfection begins Program of distributor Meetings

MARCH 17 marked the beginning of a program of 27 distributor meetings planned by Perfection Stove Co., Cleveland 4, Ohio. The first meeting was held at the Semmler Wholesale Supply Co., Detroit, with similar meetings to follow in Lansing and Grand Rapids, Mich.; Gary, Ind.; Chicago, Ill.; Rochester, N. Y.; Northampton, Springfield and Boston, Mass.; Philadelphia; Wilmington; Baltimore; Washington; Harrisburg, Pa.; Cleveland, Youngstown, Columbus, Toledo, Fremont and Cincinnati, Ohio; Aurora, Moline, Peoria and Springfield, Ill.; Omaha and Minneapolis.

A. D. MacLaren, sales manager of Perfection's Furnace Division during each meeting will acquaint the distributors with the company's plans for promoting heating equipment sales, particularly the newly-introduced year-'round airconditioning units. J. H. Rasmussen, vice-president and director of sales, also is to take part in the program, covering developments in design and production.

Biehl's, Inc., Pottsville, Pa., has been added to the Perfection organization and is distributing its line in 32 Pennsylvania counties. Gordon Biehl is president of the company, which has been in business since 1912.

OILCO
Loading four or more compartments simultaneously with Spring-Matic Model 450-A, without re-spotting transports.
THE SPRING-MATIC DOES ALL THAT YOU WANT A LOADER TO DO!
The Oilco Spring-Matic performs to perfection for petroleum marketers everywhere—and enjoys world-wide acceptance.
MODEL No. 460
SIZE: 3" AND 4"
This dependable loader represents the peak effort of 25 years of collaboration with the foremost engineers in the petroleum industry. Based on hydraulic and cam principles, it is flexible, yet sturdy, with a sliding sleeve that returns to vertical or semi-vertical position at the touch of a finger. It has other unsurpassed assets insuring ease of handling, economy, trouble-free operation and complete satisfaction. You will write for detailed descriptions.
OIL EQUIPMENT MANUFACTURING CO.
INCORPORATED
3100 VERMONT AVE., LOUISVILLE 11, KY.

Borg-Warner elects three Vice-presidents

A MAJOR REORGANIZATION of its top executive staff has been accomplished by the Borg-Warner Corp., Chicago 4, Ill., with the naming of three new vice-presidents. L. G. Porter, treasurer, becomes administrative vice-president and treasurer; R. S. Ingersoll becomes administrative vice-president and Robert W. Murphy, general counsel, will continue to head the Borg-Warner legal department in his new position of vice-president and general counsel.

Both Porter and Ingersoll will assume executive supervision of a group of divisions and subsidiaries within the corporation, with Ingersoll retaining the presidency of Ingersoll Products Div., Reflectal Corp. and Petro-Mechanics Research Div.

Hall-Neal introduces cooling Unit to Dealers

NEARLY 200 Victor dealers attended the annual convention of the Hall-Neal Furnace Co., Indianapolis 7, Ind., held on February 25 and 26. Fred S. Boone, president, delivered the welcoming speech, followed by product presentations, market and sales outlook analyses. Summer cooling was the theme of the convention, highlighted by the introduction to the dealers of the new

NOW—
ILLINOIS TOO!!!

"CRESCENT PARTS"
SERVICE

OPENING MAY 1st

NEW EAST ST. LOUIS BRANCH

1140 St. Louis Avenue at 12th Street

Crescent Parts & Equipment Co., Inc.
825-31 South Boyle Ave. St. Louis 10, Mo.

Parts and Controls for Automatic Fuel Burning Equipment

The FEW DOLLARS "SAVED"

between QUIET AUTOMATIC OIL BURNER

and the cheapest Burners—

CAN COST "DOUBLE"

THE DIFFERENCE...

- In QUIETNESS
- In LESS SERVICING
- In PERFORMANCE and EFFICIENCY

One-piece machined Cast Iron Housings, plus Heavy Duty Jefferson & Webster Transformer, and Westinghouse Motors MAKES the difference

OTHER SUPERIOR FEATURES

- Exclusive Flame Control
- Fuel Saver Pump
- Metered Air
- Minneapolis-Honeywell Controls
- Year-round Hot Water
- Burns Lowest Priced Fuels
- A size to Fit Your Furnace
- No Soot or Carbon

QUIET AUTOMATIC BURNER CORP.
ESTABLISHED 1923 • J. GORDON KAVENY, PRES.
33-35 BLOOMFIELD AVE., near Broadway
NEWARK 4, NEW JERSEY

Fuel savings for your customers!
Extra* sales and profits *for you!

Unique Chemistone filter element positively traps all sediment, rust, water, etc.— leaves oil pure and clean!

Klemm FUEL OIL FILTERS

- Low cost
- Easy to install
- 4 models—for every type of burner
- Available in metal or glass
- Guaranteed performance

Model 430G

Order today from your jobber!

Klemm PRODUCTS
DIVISION OF
KLEMM AUTOMOTIVE PRODUCTS CO.
1718 NORTH DAMEN AVENUE • CHICAGO 47, ILLINOIS
Export Division: Guiterman Co., Inc., 35 S. William St., New York, N. Y.
In Canada: Elgee, Ltd., 410 Hopewell, Toronto

Victor cooling unit, designed to be used with the company's furnace units.

Professor S. Konzo, University of Illinois, talked on "Residential summer Cooling." Phil White, Hupp Corp., later discussed "Combination heating and cooling."

Fred Gombert, Hall-Neal sales manager, concluded the convention program at a luncheon on the second day. Other activities included a banquet on February 25, a tour of the factory and Hall-Neal research laboratory on February 26.

Rockwell announces Changes in Meter and Valve Division

THE APPOINTMENTS of Paul C. Kreuch as assistant to the vice-president in charge of sales and Courtney C. Shenkle as assistant to the vice-president in charge of manufacturing, have been announced by the Rockwell Mfg. Co., Meter and Valve Div., Pittsburgh, Pa. The appointments are part of a reorganization program made necessary when L. A. Dixon, vice-president, on January 1 assumed full responsibility for all sales and manufacturing departments in the division.

Kreuch came to Rockwell in 1930 and spent four years in the San Francisco and Tulsa areas as a sales engineer. He then was promoted to district manager in Chicago and for the past year has been regional sales manager of the central region. Kreuch will continue to supervise sales in the Chicago area.

Shenkle formerly was assistant to the president of the Pittsburgh-DuBois Co., was made assistant to the general manager in 1947 when it became a division of Rockwell and finally advanced to general manager.

At about the same time Carl C. Moore was named central regional manager of sales and W. S. Andrews became district manager of the Pittsburgh district. Moore has been with Rockwell since 1930; Andrews joined the Nordstrom Valve Division of Rockwell in 1932.

Coleman Homecoming Schools being held in University

THE UNIVERSITY of Wichita is the site of the Homecoming Schools begun by The Coleman Co., Wichita, Kan., in January and which will run until mid-July. This is the third year that the company has sponsored the schools for its dealers, but the first time that it has been held in the "University of Wichita's College of Adult Education Short Course in Home Heating and Air Conditioning, sponsored by The Coleman Co."

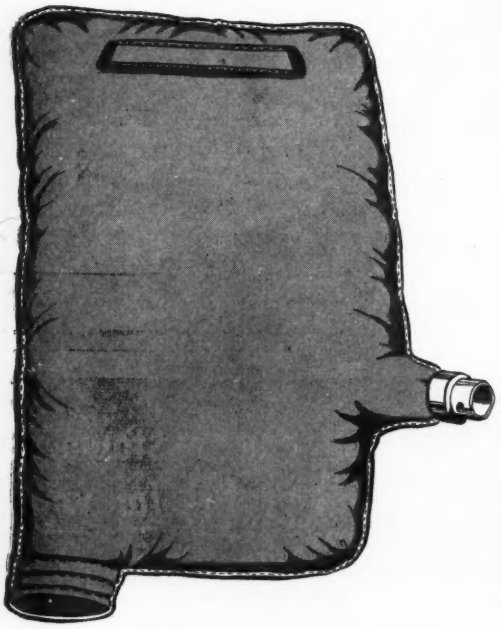
Dealers attend the week-long schools at no cost and receive instruction in installation methods, merchandising, promotion, advertising, displaying, selling and servicing. This year's program is not a repetition, but represents new classes and new demonstrations.

Kritzer names Outlets, publishes new Catalog

THREE ADDITIONS to the sales representatives staff of Kritzer Radiant Coils, Inc., Chicago 25, Ill., have been made to handle the firm's line of finned-pipe radiation. They are: Engineered Products Co., Atlanta, Ga.; John L. Harvey, Spokane, Wash.;

HARVEY DUST BAGS – for Vacuum Cleaners

NOW MADE OF ORLON



HARVEY ORLON DUST BAGS

	Trade Price
Husky, G.E. & Premier ..	$21.95
Jumbo, G.E. & Premier ..	32.95
Tor-Vac, Doyle	28.95
Tor-Vac, Tornado	23.95
Super Suction	21.95

Orlon, the new wonder fabric, is the answer to BAG Headaches in furnace vacuum cleaning.

Ordinary bags start to rot as soon as the slightest moisture from dampness or humidity activates the acid, which is always present in SOOT. Orlon is not only stronger and lighter than other fabrics, but is ACID PROOF, even when soaking wet.

Carelessness in emptying or cleaning won't damage a Harvey Orlon Dust Bag.

LASTS THREE TIMES AS LONG

A Harvey Orlon Dust Bag justifies its slightly higher cost because it will outlast three ordinary bags, and then some. You eliminate danger of soot damage, of burst bags, and actually reduce your bag cost by half.

See SID HARVEY'S CATALOG
FOR NEW VACUUM CLEANERS AND REPLACEMENT PARTS FOR EVERY OIL BURNER, STOKER OR GAS BURNER.

SID HARVEY INC.
VALLEY STREAM, NEW YORK

BOSTON • BRIDGEPORT • MT. VERNON • HEMPSTEAD • BABYLON • BROOKLYN • VALLEY STREAM • JAMAICA • UNION CITY • NEW BRUNSWICK • NEWARK • N. PHILADELPHIA • W. PHILADELPHIA • CAMDEN • READING • YORK • BALTIMORE • WASHINGTON • ARLINGTON • NORFOLK

John K. MacLean, Providence, R. I.; Snook & Aderton, Inc., Amarillo and Lubbock, Texas.

At the same time publication was announced of a new 16-page catalog, which describes the five types of baseboards that make up the Kritzer line. Designed to tell its story in pictures, the catalog incorporates coil selection data, installation instructions, accessories and specialties that are optional with the equipment. Each type of Kritzer baseboard is covered on an individual page. For each, typical uses, cross-section drawings and dimensions are given.

For its jobbers and dealers Kritzer has available a product display stand, on which are mounted demonstrator models of the five types of baseboard, three types of Fin-Pipe coils and a Fin-Tube coil for radiant panel heating.

Carrier Corp. appoints central NewYork Distributor

THE O'DONNELL Heating and Air Conditioning, Syracuse, N. Y., has been appointed distributor for 16 counties in central New York State by the Carrier Corp., Syracuse, N. Y. Cloud Wampler, president of Carrier, states that this is another step in the company's policy of establishing in each trading area one substantial distributorship, who in turn works through dealers trained to engineer, install and service all Carrier equipment.

The O'Donnell firm will be managed by Frank B. Clark. Under the new setup the Cooney Co., Syracuse, N. Y., will continue as a Carrier dealer, as will Utica Oil Heating, Utica, N. Y.; Crowley Bros., Auburn, N. Y.; George B. Hyde Co., Watertown, N. Y.; Electric Shoppe, Malone, N. Y. and Copeland Oil, Plattsburg, N. Y.

Rancho Pipeline begins delivering Oil in Houston

OIL now is being delivered through the 457 mile, 24" diameter, Rancho Pipe Line System from western Texas to refineries and terminals in the Houston area. Shell Pipe Line Corp., who designed and built it, operates the line, construction of which began in March 1952. The project was financed with private capital by seven participating companies.

The line originates at McCamey, Texas, serves five refineries on the Houston ship channel and one at Sweeny, Texas. Initial capacity is 210,000 B/D, with three pump stations, but design permits the capacity to be raised to 345,000 B/D by increasing the number of pump stations to eight.

◈

Charles J. Davis has been appointed assistant sales manager, Skuttle Mfg. Co., Detroit, Mich. For the past four years he has been sales representative for Clayton & Lambert Mfg. Co., first on the East Coast and then in Indiana, and prior to this was with General Engineering & Mfg. Co., as a southeastern regional manager.

E. W. Barnekoff has been made director of purchases and *W. H. French* becomes Cincinnati plant purchasing agent for Trailmobile, Inc., Cincinnati, Ohio. Barnekoff joined the company in 1942; French has been with Trailmobile since 1950.

DIFFERENT JOBS TAKE DIFFERENT BRUSHES

ROUND FINE WIRE 8 Sizes
ROUND HARD WIRE 4 Sizes
FLAT FINE WIRE 4 Sizes
OVAL FINE WIRE 3 Sizes
OVAL HARD WIRE 3 Sizes
DOUBLE STEM FINE WIRE 3 Sizes
ROUND FINE WIRE WITH HANDLE
ROUND FIBRE BRUSH WITH HANDLE
BRUSH HANDLES 4 Sizes

SID HARVEY'S HAS THEM ALL

You do a better, faster cleaning job when you have the right brush on the job.

You save time and money when you have them all.

Check your stock of Cleaning Brushes now and order what you need. See Sid Harvey's catalog for complete description.

Chimney and Duct Brushes (not illustrated) also available.

SID HARVEY'S
IMPROVED
SOOT DESTROYER

Safest to use for OIL or GAS fired systems. Enables you to clean the corners and places that can't be reached by brush or vacuum cleaner.

See SID HARVEY'S CATALOG
FOR NEW VACUUM CLEANERS AND REPLACEMENT PARTS FOR EVERY OIL BURNER, STOKER OR GAS BURNER.

SID HARVEY INC.
VALLEY STREAM, NEW YORK

BOSTON • BRIDGEPORT • MT. VERNON • HEMPSTEAD • BABYLON • BROOKLYN • VALLEY STREAM • JAMAICA • UNION CITY • NEW BRUNSWICK • NEWARK • N. PHILADELPHIA • W. PHILADELPHIA • CAMDEN • READING • YORK • BALTIMORE • WASHINGTON • ARLINGTON • NORFOLK

New! Revolutionary **NU-VAC**© Furnace Cleaner

with new FLAMEPROOF Bag

EARNS EXTRA PROFITS FOR YOU!

Nu-Vac's new, revolutionary principles mean clean, fast easy operation...and that means extra profits to you.

$99.50

Complete Price with Standard Equipment

Includes . . . One 10 ft. Heavy Duty Hose — One 30" Crevice Tool — One Bag Cage with Filter Bag — One Paper Filter with Draw String.

NO DUST BAG TO EMPTY — Uses disposable paper filter flameproof bag, cannot clog suction. Bag is inside can, above dirt, while in operation. Dirt is bagged when can is turned upside down, after use.

DOUBLE PROTECTION — Outer cloth bag reinforced with wire frame surrounds paper bag. Costly bag blowouts impossible. No stopping to clean bag.

HOLDS ONE BUSHEL DIRT.

QUIET — No objectionable noisy whirr.

SUPER-SUCTION — 5/7 H.P. Universal ball bearing motor with two-stage turbine fan gives 56" water lift.

LIGHTWEIGHT, REALLY MOBILE —Only 25 lbs. to roll or carry into cellars. Not 70 lbs.

FINISH — Blue Hammertone.

DEALERS NOTE—Several choice territories available. Write today for complete information.

Manufactured by

EMPIRE CHEMICAL PRODUCTS CO.

10 Longworth Street, Newark 2, N. J.

In Canada—KRESNO-STAMM, 506 Harbour St., Montreal 24.

Everyday Snags

(*Begins on page* 114)

Bonfire starts Cold Job

This apartment house steam boiler, fired at 80 gph, probably uses as heavy a No. 6 fuel oil as you've ever met up with, yet the job gives no trouble with respect to oilheating, chilling of oil lines, etc., although the burner is fully automatic and the boiler room is entirely unattended. One factor that helps tremendously is the boiler never chills. It's kept at 180° at all times because it has a tankless water heater. The burner normally remains off a maximum time of two hours or so, and the big under-the-waterline oil heater normally is 180° or hotter.

Called out to this job at 9 P.M., a service expert learned this from the worried superintendent of the apartment house: "We pulled the main switch, turned off the burner to let the boiler cool down somewhat so we could clean the firetubes in comfort. This time, we wanted to do a thorough job, have a man get into the boiler.

"At 3 P.M. and with the boiler nice and clean, we tried to start the burner. The flame would light up as it should, burn a few seconds, then go out. The electronic controls went into action right away, cutting off the oil to the atomizing cup. Sometimes the flame would burn about three minutes, then would go out. Could it be draft trouble? Seems to be, because the over-fire draft gage needle swings wildly with the burner trying to start."

Because the vacuum gage on the output side of the suction-line strainer was showing 15", whereas usually it showed 8" to 10", the superintendent had cleaned the strainer basket three times. That didn't help. At 9 P.M., the burner still was not running despite dozens of attempts to get it going.

After ten minutes of sizing up the trouble and re-setting the safety trigger of the electronic control panel, the service expert made these points to the superintendent:

"First, it's not draft trouble. Your over-fire draft gage goes wild only because the fire puffs and snorts as it tries to get going.

"Second, your suction-line vacuum gage gives the 15" reading only because the suction line is unusually cold.

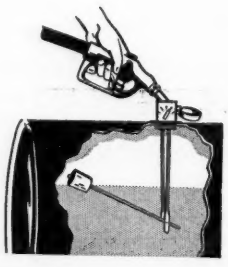
Products for Better Service by **APPLIED MECHANICS CO.** 167 OLIVER STREET BOSTON 10, MASS.

Galongage

"Tells" in gallons. Has overwhelming customer appeal. Conveniently packaged, easy to install even in tight quarters. Costs less to ship, takes only 1/4 of the storage space required by most gauges. Underwriters approved.

Fil-thru

Gauge, vent- and fill-pipe all in one unit for 55 gallon drums. Can be installed without tools.



International

Best of the lever arm type gauges for your lower price field. Factory assembled, its flexible float arm permits immediate oil-tight installation. No need to make time-consuming adjustments.

Extra-large, easily-read numbers on the aluminum dial are calibrated in "eighths." Approved by Underwriter's Laboratories.

But the pump in the burner is getting plenty of oil. When I closed the valve at the input side of your suction-line strainer, I got a reading of 25" on the vacuum gage.

"Third, unusually cool fueloil is the cause of the trouble. If we can keep the burner running 20 minutes by hook or by crook, we'll warm the boiler enough to get some good out of the under-the-waterline oil heater, and we'll get out of the trouble."

Adjusting gph Rates

The problem boiled down, then, to keeping the burner running 20 minutes. One way he could accomplish this, the service expert said, was to change the adjustments of the gph regulating devices on the burner. These were somewhat complicated because of viscosity compensation. The pressure gage on the burner usually showed 30 to 45 lbs. pressure with the boiler hot, but now was showing 170 lbs. pressure because the boiler and the fueloil coming to the burner were cold. The serviceman explained to the superintendent that there were two disadvantages in re-adjusting the burner to keep it running with cool oil coming to it. First, the superintendent could not do the same thing, if the trouble were encountered in the future after the boiler had been chilled somewhat to make tube cleaning easier. The super never adjusted the complicated gph devices on the burner. He did not understand them fully, thus relied on a serviceman to adjust them.

The second disadvantage of re-adjusting the burner to keep it running with cool fueloil coming to it lay in the fact that in an hour or two, with the oil lines at their normally-warm temperatures, different adjustments would be needed. The serviceman would have to wait an hour or two to return to the original adjustments, known to be satisfactory for normal operation. He might have difficulty returning to precisely the proper, original adjustments.

"I believe we might be able to keep the burner running with cold oil coming to it," said the serviceman, "simply by helping the gas-electric ignition system by building a small bonfire in the front of the firebox. The bonfire will give about ten times the ignition heat that the gas pilot gives, so will give character to the flame—even though the oil is not atomized as well as it should be. More of the oil sprayed into the firebox will ignite, less will splatter on the firebrick. In addition, the bonfire will keep on burning after the gas ignition is cut off by the controls, and that will help keep the flame burning."

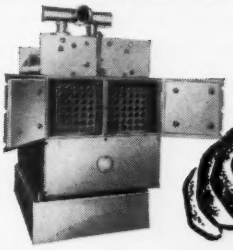
Cardboard boxes and thin pieces of wood were used to produce a proper bonfire in the boiler, and after three tries the flame of the oilburner continued to burn. Within 15 minutes, the burner was settling down to normal readings for its vacuum gage, and the pressure gage.

"Remember the trick of using a bonfire to get your burner going when it balks because its oil is too cool," the service expert told the superintendent. "Just now, at 9 P.M., we had to build quite a big bonfire to get the burner going. Had you used the trick at 3 P.M. when you first tried starting up after finishing cleaning the tubes, the boiler would have been a lot warmer

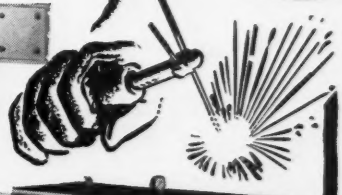
ENGINEERED STEEL BOILERS by Portmar

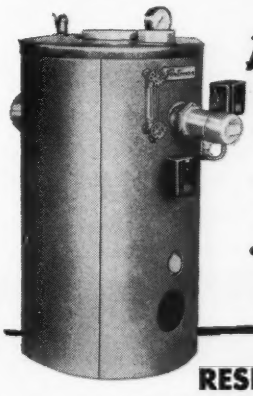
...are rated for their dependability and "know-how"

PORTMAR engineering "know-how" consists of one part ability, one part training and one part experience. Architects and contractors recommend and install thousands of Portmar Boilers yearly. They know that the correct mixture of "know-how", workmanship and materials go into the construction of every boiler.



New Type "C" Boiler for the commercial field—being prepared for delivery to a public institution. Available in *split sectional* and one piece construction for apartment house and all large structure installations. 12 sizes, from 3,650 to 21,250 sq. ft., steam. Larger boilers made to order.

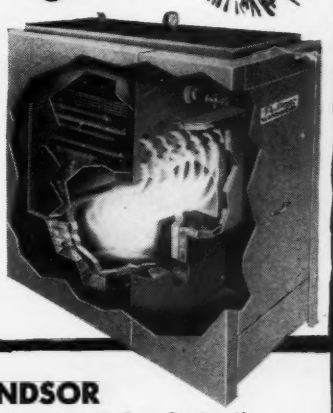




Budget Priced for Faster Sales!

Portmar offers a complete line of *oil or gas fired* heating boilers for *steam and hot water systems* — in all capacities.

• *Contact your jobber or write direct for literature and prices.*



RESIDENTIAL
"Vertical Tube Series"
For the cottage and small building in both flush and extended eye-appealing jacket styles. 6 sizes — Steam: 320 to 1,100 sq. ft.

WINDSOR
"Horizontal Tube Series"
For the small building, larger residences, and medium sized buildings with attractively styled extended jacket. 12 sizes — Steam: 320 to 3,000 sq. ft.

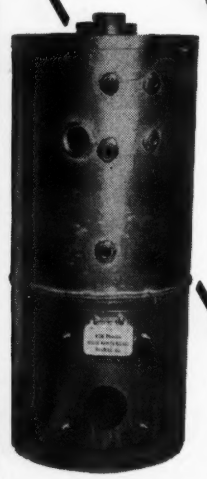
"Engineered Quality Steel Boilers for Luxurious Heating"

Portmar Boiler Company Inc.

193 Seventh Street • Brooklyn 15, N. Y.

RESIDENTIAL, COMMERCIAL, INDUSTRIAL WATER HEATERS AND HEATING BOILERS
PORTMAR STEEL BOILERS • ROTARY FLAME BOILERS

NEW YORKER
FIRE TUBE STEEL BOILERS

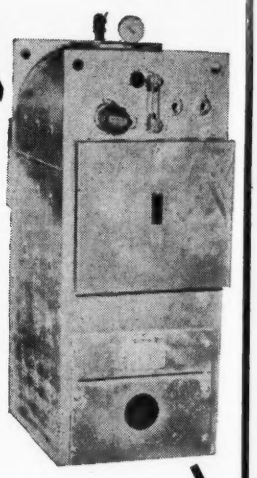


VERTICAL SERIES

Here's the ideal low-cost boiler for your heating requirements. Quiet, non-pulsating operation. Large instantaneous coil provides abundant hot water. Specially engineered integral combustion chamber. Easy-to-clean New Yorker vertical boilers are available with ASME stamp.

HORIZONTAL SERIES

This New Yorker Steel Heating Unit provides highest combustion efficiency. Oversize tankless coils provide year-round hot water. Each fire tube has spiral turbulator baffle. Big door offers easy access for cleaning. Integral combustion chamber resists temperature up to 3200° F—large combustion space.



WRITE NOW FOR DETAILS

NEW YORKER STEEL BOILER CO. INC.
Colmar, Pa. • Lexington 784 or 838

. . . . Everyday Snags

than it was at 9 P.M. Just one cardboard carton and a few sticks of wood would have been enough to get you going at 3 P.M."

A bonfire in the firebox can help start any job that's stone cold. It helps start a new installation for the first time. It helps start up a boiler that's cold because its firebox has been repaired or replaced. True, switching temporarily to continuous ignition also helps. However, a bonfire helps far more than continuous ignition.

Bathroom Towel Heating

"You haven't really lived," says a heating engineer, "unless the damp towels in your bathroom get the benefit of heat from a warm-air supply register or a radiator. There's real pleasure in hanging a soaking towel over a register or radiator after you take a bath, and returning in a short time to find the towel warm and dry. In planning new heating plants, bear that in mind. Locate the bathroom warm-air register or radiator where the owner can have a towel rack over it."

Precast Firebox Trick

Cutting out for grate lugs can be a headache, when you install a precast firebox. If you just slam away at the parts of the firebox using a hammer, usually you'll whack away too much or too little of the firebox.

Avoid trouble of this kind and save time besides—simply by fitting a suitable grinding wheel to your portable electric drill, and using the grinding wheel to trim precisely the pieces of the firebox. Don't overlook the fact that excellent combustion and long life for the firebox depend on its fitting the grate lugs closely.

Low-Voltage Detector

Here's a word-to-the-wise from an exceedingly thorough domestic-burner expert. Servicemen thorough enough to use on-off recorders can latch on to this idea without the help of a diagram.

Use your on-off recorder to tell you if a job is having low-voltage trouble at times of peak electrical loads, and if you can't easily arrange to put a voltage recorder on the job.

You need a voltage-sensitive relay. That's a relay that will hold in for 110 volts, but will drop out (opening or closing its contacts) if the voltage becomes unsatisfactorily low—say lower than 95 volts or any other minimum you select. At the fuse box of the oil-burner, wire up the relay so it will remain pulled in when the voltage is satisfactory. Wire your on-off recorder in such a way that it will report on any

Here's how to **CUT YOUR CUSTOMERS' FUEL BILLS**

Always Install a PARAGON 700 Series 7-Day Calendar Time Switch

When you install a 700 Series Time Switch on a heating job, you insure economical operation — and customer satisfaction. For example, it's simple to set the dial to switch to a lower thermostat setting *automatically* Saturday noon, then switch back to the higher setting earlier than usual Monday. At the same time a regular switching schedule for night shutdown of the heating system can be maintained the rest of the week. You can accurately set operations from ON to OFF or from OFF to ON as close as 3 hours apart . . . at *different* hours each day if necessary . . . or you can omit any days desired. You can set it in advance for automatic control of a week's operations — yet make changes instantly when necessary! Send for complete details — now! Ask for bulletin No. FO-5207.

• fully AUTOMATIC • completely FLEXIBLE • instantly CHANGEABLE
Dial graduated in hours and half hours — days distinctly marked — day and night periods clearly separated. Available in 24, 115 and 230 volts; 25, 50 and 60 cycles. Prices as low as $36 list.

PARAGON ELECTRIC COMPANY TWO RIVERS, WISCONSIN
TWO RIVERS, WISCONSIN

WORLD'S LARGEST EXCLUSIVE MANUFACTURER OF TIME CONTROLS FOR ALL PURPOSES

dropping-out of the relay. Return in 24 hours and find out if there's been low-voltage trouble.

There's a lot to selecting the proper voltage-sensitive relay, but dyed-in-the-wool control experts can handle that complication!

Cutting Insulators

Facing the need to replace a usual porcelain insulator of the high-tension ignition system of a gun burner, one burner expert finds he can reduce the length of an insulator with the help of a grinding wheel. To reduce the length of an overly-long insulator, he turns it around and around while pressing it against an edge of the grinding wheel. He cuts right through it finally. By keeping in his car a few exceptionally long insulators, he's equipped to replace the insulators of almost any gun-type burner.

Scotch Boiler Wrinkle

There's a certain wrinkle related to many oil-fired Scotch boilers, a combustion engineer points out. They are fitted with refractory material that remains relatively cool, because it is thin and in contact with direct heating surfaces. In extreme cases, the refractory material in contact with the oil flame fails to become hot enough—it does not become cherry red-hot after the burner is running half an hour, as do the fireboxes in many boilers of other types. The result of operating a burner with the firebox refractory material too cool is a high smoke-instrument reading with a properly-high CO_2 reading, or a low CO_2 reading with a good, low smoke-instrument reading.

A wall in the back of the firebox of certain Scotch boiler jobs helps end this difficulty, says this engineer, by increasing the temperature of the refractory material which is in contact with the flame. He declares that even on a Scotch-type boiler installation, he gets best combustion-test readings only by arranging things so that any refractory material in contact with the flame becomes cherry-red hot when the burner runs ten minutes. That's starting with the boiler hot, say at 160° or so, not starting with the boiler stone-cold.

Coleman's Chicago Office to serve midwestern Zone

ESTABLISHMENT of a zone office in the Merchandise Mart, Chicago, has been announced by The Coleman Co., Inc., Wichita 1, Kansas. The Chicago operation will be managed by Martin G. Raake and will serve Coleman distributors in eight midwestern states.

Assigned to the Chicago zone are: J. R. Montgomery, Mark Darmer and Tom Poletti, regional sales managers; Reginald Randall and Charles W. Barchers, service engineers and J. R. MacDowell, water heater specialist.

C. L. Burrows, vice-president and national sales manager for Coleman, says the move is the first in a series of zone operations intended to place sales management closer to its distributors and to provide them with ready assistance in handling technical matters, service programs and dealer education activities. Adoption of the plan, Burrows explains, also involves a substantial increase in manpower.

Features Make the Difference
This winsome lass and ELECTROL have much in common, both have exceptional features that get results.
You see, Electrol has last-a-lifetime features no other oil burner can match... features that bring in plenty of easy big-profit sales because they give more heating comfort and efficiency dollar for dollar—and they are exclusively yours with Electrol's protected Dealer Franchise. And every home, institution and small industry is a prospect for you, because there's an Electrol burner to meet every heating requirement.
Examine Electrol's exclusive features and see why Electrol makes the difference in your oil burner sales. Write for your free Electrol Booklet today.
FREE ELECTROL BOOKLET
Gives complete details on the Electrol Line of Oil-Fired Heating Equipment.
SINCE 1918
ELECTROL
BURNER MANUFACTURING CO., INC.
Rutherford New Jersey
FAMOUS BALL FLAME EFFICIENCY
ELECTROL
Finest
Since 1918
4166
A FEW CHOICE EXCLUSIVE AGENCIES STILL AVAILABLE—WRITE NOW!
OIL BURNERS • AIR CONDITIONERS • WATER HEATERS • BOILERS

ONE

is all you need!

Supplied in cast iron, screwed, illustrated above, or in bronze for sweat connection (not illustrated).

Yes! **For more efficient**
ONE-PIPE HOT WATER SYSTEMS
install only

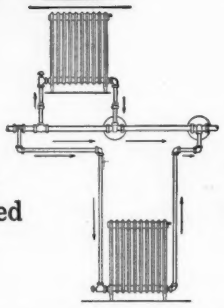
ONE

TACO VENTURI FITTING
per radiator - on return
(use a simple tee on supply...

ONE

TACO VENTURI FITTING

Yes! **The same Venturi Fitting is used for upfeed or downfeed radiators**



install

ONE

TACO VENTURI FITTING JOB
to convince yourself... you'll save money and aggravation!

Better Heating-Better with Taco

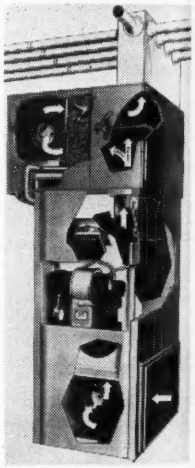
Taco

TACO HEATERS, Incorporated
137 South Street—PROVIDENCE 3, R. I.

New Products

Coleman Airconditioner features water Saving

A NEW LINE of Coleman Blend-Air units, combining cooling and heating, were introduced and demonstrated on March 3 in New York by Sheldon Coleman, president and general manager of the company. The new models, which comprise a full line of packaged central air conditioning equipment with a newer way of circulating fresh filtered air for continuous comfort both summer and winter, are for use in old or new homes.

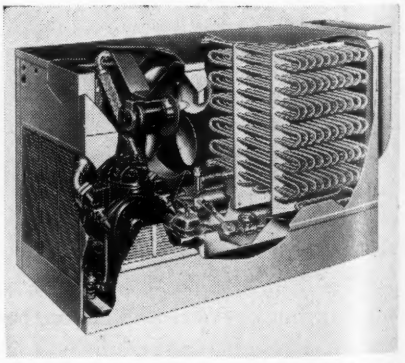


Mr. Coleman in his talk stressed the fact that the air handling system, which includes 3½" diameter, factory-fabricated ducts, and air blenders to provide each room with its own circulation combines the important advantages of easy installation and economic operation, as well as providing comfort.

The outstanding features of this system he further stated, included:

1. A higher level of individual comfort, achieved by removing about twice as much moisture from the air as is the case with other systems.

2. Since the consumption of water for condenser cooling is a considerable item in the cost of operation, Coleman has designed a new evaporative condenser package for use with the cooling unit that uses about six gallons of water per hour for a two-ton cooling installation. According to Coleman this contrasts sharply with the nearly 200 gallons an hour required if no water saving device were used. The new evaporative condenser package takes the place of the cooling tower and is compact enough to be located out of the way on the outside of the house or even in the corner of a garage.



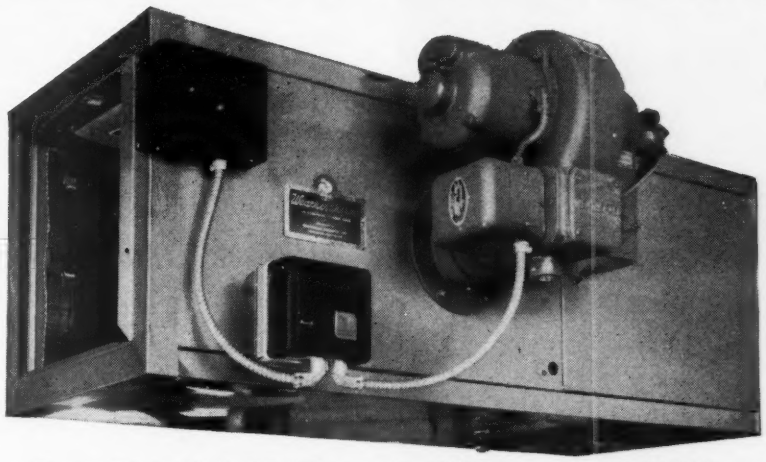
WEATHERTHERM DIRECT-FIRED OIL HEATERS

LO-BOY MODEL SUSPENDED UNIT HI-BOY MODEL

Domestic Units 80,000 To 450,000 B.T.U.—Industrial 400,000 To 2,000,000 B.T.U.

Each Domestic unit will be shipped assembled, the oil burner being shipped separately. Model AL Flanged Burner—Supplied on all Domestic units.

SUPERIOR CONSTRUCTION



QUIET OPERATION

ALSO Domestic and Industrial Conversion Oil Burners 1 to 35 G.P.H.
Steel Boiler-Burner Units—3 Pass Horizontal or Single Pass Vertical

WRITE FOR NEW CATALOG

Weatherall Engineers

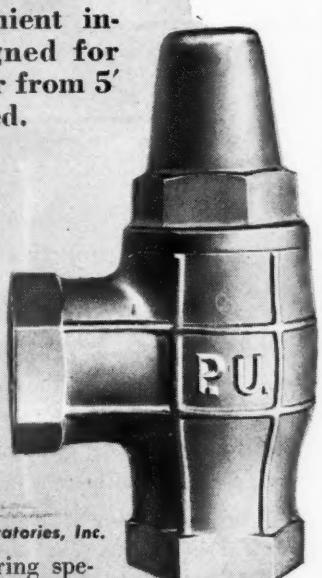
INCORPORATED
387 CHARLES STREET, PROVIDENCE 4, R. I.
MANUFACTURERS OF QUALITY HEATING PRODUCTS SINCE 1928

PREFERRED *INDUSTRIAL*

Anti-Syphon Valves

900 gallons per hour even with No. 6 oil...!

Angle type construction for convenient installation designed for heads up to 5′ or from 5′ to 10′ as required.



Preferred Industrial Anti-Syphon Valves can do the job better because they are designed better. A complete line of valves for pipe sizes of 1¼", 1½", 2", 2½" and 3" For use with all grades of fuel oil (including No. 6) and maximum capacity of 900 gallons per hour.

* Approved by Underwriters' Laboratories, Inc.

When ordering specify Industrial Type A and pipe size.

PREFERRED UTILITIES MFG. CORP.
1860 BROADWAY · NEW YORK 23, N. Y.

018

for QUIET OPERATION of fans, pumps and blowers . . .

LOVEJOY

TYPE DX DOUBLE FLEX
FLEXIBLE COUPLINGS

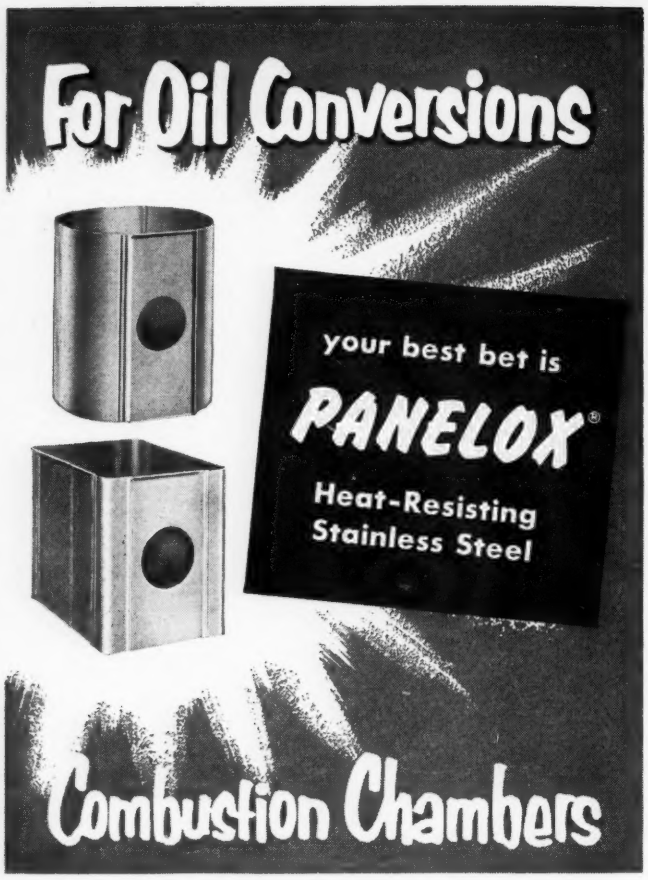
The rubber center unit gives added flexibility to this Lovejoy Flexible Coupling and assures smooth, quiet operation. It's specially designed to correct misalignment, with maximum absorption of shock, vibration, torque and overload. Easily installed — even in close, dark quarters.

Most fan manufacturers supply blowers with L-R jaws on blower hubs.

SEND TODAY FOR COMPLETE LOVEJOY CATALOG

LOVEJOY FLEXIBLE COUPLING CO.

5012 W. Lake St. Chicago 44, Illinois



In every way, Panelox combustion chambers are your best bet for conversion from coal to oil. They greatly increase heating area of the heat exchanger; provide faster heat transfer, better heating performance, cleaner combustion; eliminate override for more uniform control; save fuel.

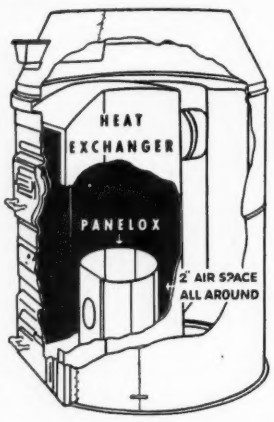
Panelox chambers are easy to install—interlocking panels slide together without tools. They save freight—weigh just a fraction of other types. No breakage in shipment or handling. Easy to stock—panels nest together in compact cartons. Sizes for every shape of installation.

NOTE: Proper installation is important. Old refractory or fire brick must be removed. There must be absolutely no insulation or backfill between Panelox chamber and heat exchanger or furnace casing. At least 2" space must be allowed between chamber and heat exchanger.

Interlocking panels—quadruple thick at seams for extra strength and rigidity.

Individual panels slide together to fit a wide range of chamber dimensions.

Write today for full details, sizes, prices!



Heat from Panelox is absorbed directly into walls of heat exchanger for fast heat transfer, maximum efficiency.

STEFCO STEEL COMPANY
Heating Equipment Div. • Michigan City, Ind.

3. The new system can be had as a complete year-round airconditioning package or as a heating installation to which may be added the cooling unit later. In addition, existing Blend-Air heating systems may be converted to cooling.

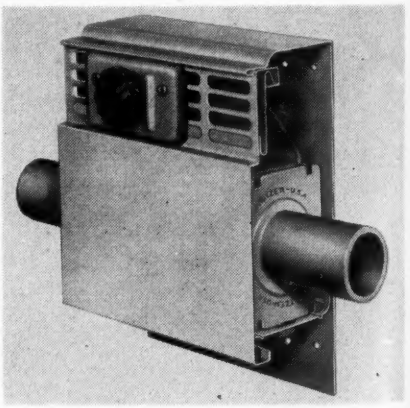
4. The cooling units are available in 2, 3 and 5 ton capacities in two different types of package systems. One consists of the furnace with the cooling section mounted above, with an evaporative condenser and a compressor unit that can be installed outside the house to distances up to 60 feet from the furnace. The other type is a side-by-side installation of the furnace and a self-contained cooling unit. The self-contained unit can be applied with conventional forced warm air heating systems as well as with Blend-Air.

The blenders from which the system takes its name replace the conventional warm air register and aspirate air from the room, mixing it with the heated air from the furnace in order to provide automatic room air circulation. In summer cooling, the blenders perform the same function and temper the chilled air before it is admitted to the room. This allows the cooling coil to be operated at lower temperatures and is responsible for additional dehumidification.

Made by: Coleman Co., Inc., Wichita 1, Kansas.

Kritzer redesigns its Line of five baseboard Radiators

KRITZER universal baseboard is one of five different types available in its completely redesigned line of baseboard heating equipment. The new models meet requirements in residential, institutional, commercial or industrial heating, either steam or hot water.



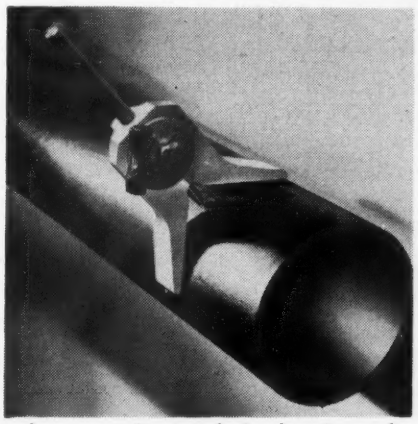
Newer features include: Full height, solid steel, aligning back plate which firmly supports all elements and acts as a barrier against heat loss and dust streaks. A special new bracket snaps onto the back plate, supports the upper and lower edges of the front cover and carries the new Kritzer slide cradle. The cradle fits snugly to the fins and prevents movement of the coil unless necessary for realignment. The aligned cradle moves with the coil and runs smoothly and quietly on the ribbed bracket. It also prevents any fin contact with front or back covers. Front plates snap onto assembled support brackets and back plate to complete the enclosure.

Optional equipment includes manifold valve and manifold, a complete line of accessories, panels, corners and joint covers as well as new damper and control.

Made by: Kritzer Radiant Coils, Inc., 2901 Lawrence Ave., Chicago 25, Ill.

Boyce centering Head aids in pipe and tank Work

CONTOUR MARKER offers the Boyce Centering Head as "five tools in one" to replace the protractor, centerhead, center punch, level and scale in the tool chest. The pocket-sized device, with dial set leveling gauge, can be used to mark a point at any degree from center on pipe or other round objects. In addition it will measure or establish the degree of any angle or of the bend on the outside or inside of any circumference, as well as determine the degree of declivity of any flat surface.

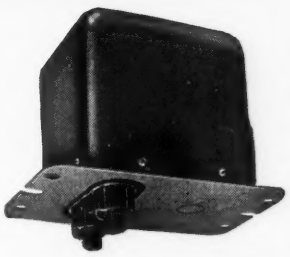


The manufacturer states that the centering head makes it easier to lay out keyways, manifold, bellends and butt-ins and also to create uniform pipe bends and set tanks. Its two pronged cast aluminum body has a 1¾" sheet aluminum protractor dial fitting with an accurate level. Graduated in 2½° and marked in 10° the dial is easily read. The marking punch is ⅜" drill rod with hardened points.

Made by: Contour Marker Corp., 1843 Compton Blvd., Compton, Calif.

DONGAN TRANSFORMERS

HOW THEY SOLVE IGNITION PROBLEMS



ESPECIALLY designed to meet the varied needs of individual oil-burners, Dongan Transformers effectively solve the oil-burner ignition problem. Standard types with voltages from 5,000 to 20,000. Special types to meet specific requirements.

Voltages from 5,000 to 20,000.
A variety of sizes and mountings

WRITE FOR Literature

Dongan Electric Manufacturing Co.
2981 Franklin Detroit 7, Mich.
"The Dongan Line Since 1909"

REACH OUT FOR MORE SALES WITH Radiant

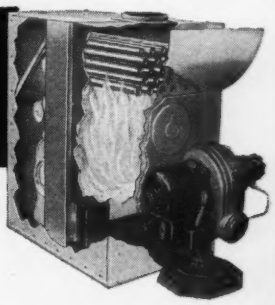
A Complete Line from ¾—30 Gals. Shell Head Models ½—10 Gals.

RESIDENTIAL
COMMERCIAL
INDUSTRIAL

Every PROFIT Reason Says—BUY RADIANT!

Performance—Equal to the highest priced burners. Price — Meets competition every time . . . *plus* — Low Upkeep — Factory Guarantee . . . National Distribution . . . Protected Territories . . . Easy Installation . . . Minimum Servicing.

THE *Radiant* OIL FIRED WINTER AIR CONDITIONER



Precision Engineered for Economy in Price—Installation—Operation

SUPERIOR DESIGN — Tubular construction presents greater heating surface to flue gases than conventional furnaces . . . jacket is substantial and well finished . . . high temperature combustion chamber . . . motor driven blower unit and air filters.

FACTORY ASSEMBLED—Shipped complete with combustion chamber installed and jacket completely assembled.

Available in Four Models: Low Boy, Suspended Unit, Hi Boy, Counterflow

WRITE FOR COMPLETE RADIANT LITERATURE.
You'll sell— and profit more!

RADIANT UTILITIES CORP.
8815 18th Avenue, Brooklyn 14, N. Y.

RADIANT OIL BURNER

ELIMINATE "PULSATING" PUFFING, SOOTING IN OIL-FIRED HEATING PLANTS WITH quickdraft

Draft is merely heated air rising up the chimney to create a negative pull over the fire. When heat is first called for, however, the chimney is usually cold and the heated air, striking the cold flue walls, is cooled and loses its buoyancy. Even if the chimney is perfect, considerable time elapses before it is heated and full draft established.

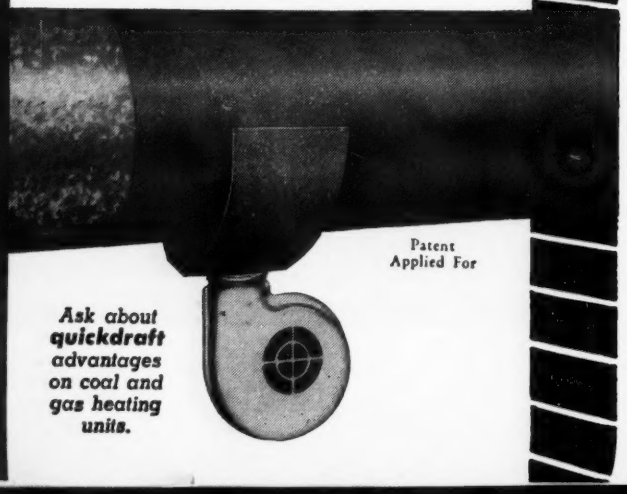
Without full draft, sufficient oxygen to support full combustion is not drawn into the fire. Resulting unburned oil vapors are wasted in the chimney, escape into the house causing objectionable odors and film or collect in the firebox causing puffing. Insufficient oxygen also results in intermittent burning or pulsating, accompanied by loud hammering. Until full draft is established, unburned carbon particles are not carried away but precipitate in radiators, smoke-pipe and chimney as soot.

quickdraft corrects this condition by creating full draft the instant firing begins, insuring an adequate supply of oxygen for complete combustion and carrying all combustion products up the chimney. Controlled by the thermostat, ***quickdraft*** operates as long as the fire is burning yet does not "build up" the draft when natural draft is functioning normally. It is especially effective where chimneys are poorly constructed or where bends or elbows in chimney or smoke-pipe retard natural draft.

quickdraft is reasonably priced, quickly and easily installed, uses no more current than a small light bulb. It is simple, fool-proof, durable . . . vitreous enamel units will not rust or wear out. *Does not restrict smoke-pipe opening, even in event of current failure.*

Use ***quickdraft*** to correct draft problems caused by low, defective and inefficient chimneys. Figure it in new installations and conversions, too, to *insure* satisfaction. Write for bulletin.

quickdraft
COMPANY
DIVISION OF THE HALL'S SAFE COMPANY, INC.
809-C 10th Street, N. E.
CANTON 4, OHIO

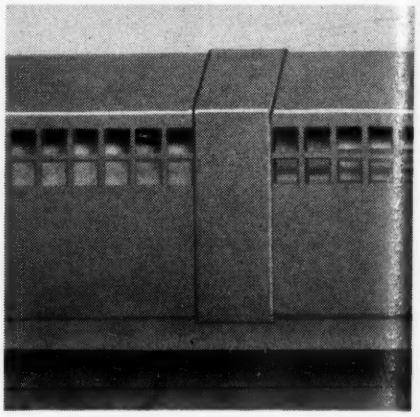


Patent Applied For

Ask about quickdraft advantages on coal and gas heating units.

Federal Baseboards for new Homes or Conversions

FEDERAL 4-Square copper fin baseboards are rated at 180° F., 600 Btu output per lineal ft. at 70° F. design temperatures. Design has been worked out to make the panels compact and modern in appearance, with ease of installation emphasized.



Installation is accomplished in four steps: Nail back plate to studs, slide flexible hangers in hanger slots, sweat fin and tube to standard ¾" fittings, hang front plate and damper on back plates. The units are adaptable to new home construction and can be used for conversion work on existing radiator systems.

Made by: Federal Engineers, Inc., 29 Massasoit Ave., Barrington, R. I.

Fueltone X-10 attacks Sludge from bottom of fueloil Tank

AMPION FUELTONE X-10 is a fueloil sludge solvent being offered to dealers in 8, 16 and 32 oz. resale packages and bulk quantities up to 55 gallon drums.

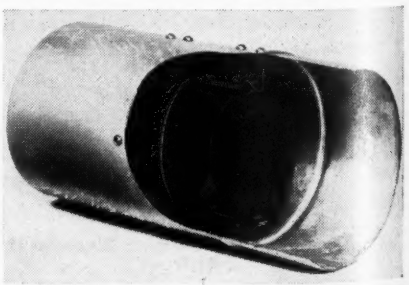
Fueltone X-10 is heavier than fueloil and water so that it drops down to the bottom of the tank to attack the sludge on the bottom. It acts by changing the surface tension of the sludge enabling it to dissolve in the body of the oil. It is designed to alter the cohesion of the sludge molecules and to impart a uniformity to the oil so that the entire contents of a tank can be utilized by a modern oilburner in a more efficient manner.

One pint added to 750 gallons of fueloil is usually adequate.

Made by: Ampion Corp., 488 47th Ave., Long Island City 1, N. Y.

Fuel Econ-O-Mizer System for reduced oil Consumption

THE FUEL ECON-O-MIZER COMPANY has introduced a new fuel economizer system, manufactured in varying sizes for any type of new or old furnace. Two features of the economizer systems are: an automatic exhaust valve which restricts the flow of heat and gases on leaving the furnace, both while the burner is on and off,



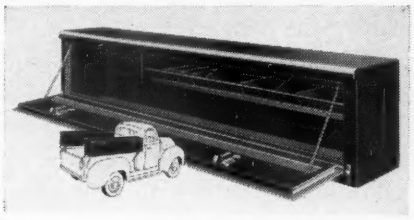
and a simplified modern anti-pulsating combustion head that fits the majority of gun-type burners. The head builds static and directional air pressure to mix with the atomized oil, thereby improving combustion.

The system also incorporates a refractory chemical Reflect-O-Heat, a heat reflector in powder form which when spread on the combustion chamber floor crystallizes under heat. The reflection created by the crystalized mass increases flame temperature and glows after the burner shuts off.

Made by: Fuel Econ-O-Mizer Co., 1 Washington Ave., Providence 5, R. I.

Service-Twins Compartments designed for small Trucks

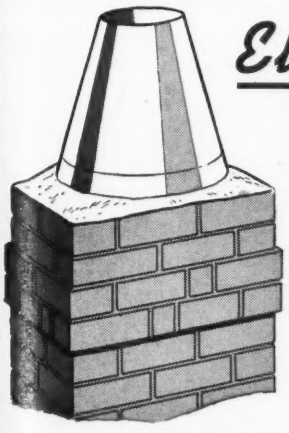
MCCABE-POWERS is now producing newly designed tool and material compartments for ½ and ¾ ton pick-up trucks. The compartments are shipped in pairs, completely painted inside and out. The finish, in medium-dark green, is baked on synthetic enamel that resists rust and chipping.



Compartment doors are of double-panel, weathertight construction. Slam-action catches are recessed for safety

Every Chimney Needs a

WIGWAM THERMCAP



Eliminates

- DOWN DRAFT
- SLUGGISH DRAFT
- DAMAGING ACIDS
- CARBON
- CREOSOTE
- RAIN MOISTURE
- FLUE GAS CONDENSATION

The WIGWAM THERMCAP improves combustion—thus saves fuel. Looks good—*is* good. Keeps entire chimney *dry*. Has no moving parts to wear out. Saves costly repairs. Poor draft is dangerous; good draft means economy. The patented principle of WIGWAM THERMCAP creates a draft-pull at the chimney top. ADAPTABLE TO ALL CHIMNEYS.

Write for literature and instruction sheet.

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

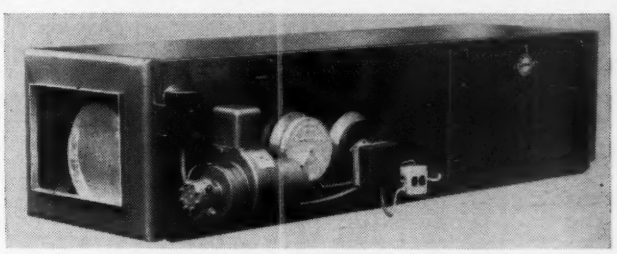
Horizontal Furnaces Opening New Profit Opportunities

Heating Contractors Help Builders Beat Rising Costs and Make Money Doing It

Keeping the cost of new homes within the reach of potential buyers is a major problem today. Builders and contractors are meeting it in two ways: First, to beat the high cost of single lots, they are developing large tracts of land and building many homes at the same time. Second, they are eliminating every possible costly feature—basements, garages, even service rooms.

New "Besser Junior" Opens New Field

This is opening up a whole new field of opportunity for the heating contractor and distributor—the sale and installation of underfloor central warm air heating systems. The sensational NEW "Besser Junior" makes central heat possible in even the lowest cost homes.



The Besser Horizontal Furnace Needs No Basement or Utility Room—Can be Installed Under-floor or Overhead

Because of the great savings, more and more builders are turning to the new type horizontal, oil-burning furnaces. A central heating system adds value to any house, makes it easier to sell—is far superior to floor furnaces. Now, the NEW "Besser Junior" brings central heat within every price range.

Here's Where Profits Are Made

Bidding on the big jobs is always competitive, so where do you come in? Here's the answer: to start with, you've got something to sell—the answer to a builder's prayer—a way to put central heat into every house without the cost of a basement or utility room. That's a natural advantage. Now, the cost is lower than ever.

Still, you may have to figure closely, so where's your profit? Right here! Service call-backs are what eat up your profit. When you install a Besser Horizontal, service calls are fewer—far fewer—because only the best goes into a Besser! Properly installed, it's virtually trouble-free. Call-backs will be few and far between. Every Besser is fully guaranteed . . . because it's built to last!

Besser Plant Facilities Expanded 50% to Meet Growing Demand

Dual Sales Possibilities—Overhead, Underfloor

Quiet, automatic Besser Horizontals are equally adaptable to overhead installation on commercial jobs where floor space is at a premium. One furnace gives you a double sales potential. Full range of sizes to meet every job need—delivered to you assembled, ready to install.

New Territories Opening—Inquiries Invited

Greatly expanded plant facilities make it possible to serve a larger area. Distributor franchises and dealerships in certain areas offer a real opportunity for profit in a product you can sell with confidence. Inquiries from aggressive Manufacturer's Agents invited. For full information write: Besser Metal Products Corp., 754 Clement Ave., P. O. Box 4064, Charlotte, N. C.

It's NEW!

The PurOlator

MICRONIC*

oil burner fuel filter

- with the anti-spilling depressed head
- 252 sq. in. of filtering surface
- stops dirt down to .0002 in.
- 120 g.p.h. gravity flow capacity
- 7,000 gal. per year dirt-retention life
- easy to install and service

These exclusive Purolator* features mean fewer service calls . . . unsurpassed valve and nozzle protection . . . more dependable heat! Write for specifications and the name of your nearest supplier. Reg: U. S. Pat. Off.

PUROLATOR PRODUCTS, INC.
Rahway, New Jersey and Toronto, Ontario, Canada
Factory Branch Offices: Chicago, Detroit, Los Angeles

PUROLATOR
WORLD'S FINEST OIL FILTER

and appearance. Cylinder locks, provided on each door, are keyed alike for convenience. Parts bins are provided for each compartment as standard equipment. Bins are equipped with removal dividers.

Service-Twins are available in 74" and 84" lengths for installation on ½ and ¾ ton pick-up trucks respectively. They can be mounted in a few minutes using only a drill and wrench. An overhead rack, with adjustable ladder brackets, is optional.

Made by: McCabe-Powers Auto Body Co., 5900 N. Broadway, St. Louis 15, Mo.

Thermolok adds Model for industrial Controls

AN ADDITION to its line of thermostat locking devices has been announced by Thermolok for use with industrial control equipment. The new combination lock and guard incorporates the same simplicity of design that is an integral part of the complete line.

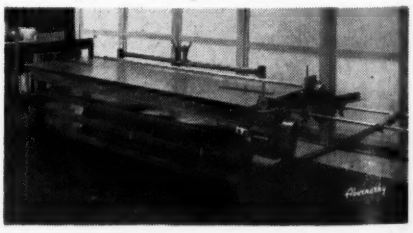
The thermostat locking device requires no holes in walls, no nails or screws, no heat lock and according to the manufacturer requires only 15 seconds to install. Especially designed for rough usage it can be used in schools, recreation centers, factories and other commercial buildings.

Models are now available to fit M11, M147, T42 and T42A temperature controls.

Made by: Thermolok Mfg. Co., Inc., 541 Rogers Ave., Brooklyn 25, New York.

Engel's Duct Master is versatile metal Machine

ENGEL offers the new Duct Master multiple unit for sheet metal notch cutting and layout. The performance of three operations in one by this tool makes laying out, cutting and notching of ducts and fittings simple operations. Eliminating the use of a rule, scratch-all or a pair of snips, the machine greatly reduces the time required for making fittings and ducts.

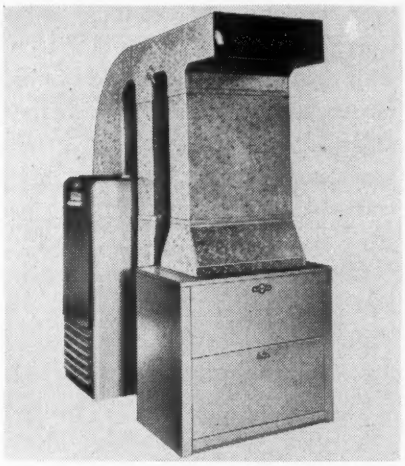


The multiple notching unit, which can be purchased and used independently of the Duct Master, performs notching in one-hand operation on metals up to 18 gauge galvanized iron. The notchers are adjustable to any depth up to 1¼" and each can be removed or adjusted by hand for accurate spacing. The motorized cutters will cut through all metals up to 18 gauge galvanized iron. The top of this tool provides a working area for measuring, marking or scribing special fittings. The calibrated straight edge rule at top of the table locates measurements on sight for cutting and when, used with a standard square, quickly locates points for scribing and laying out.

Made by: Engel Sheet Metal Equipment, Inc., 3001 Union Ave., St. Louis 15, Mo.

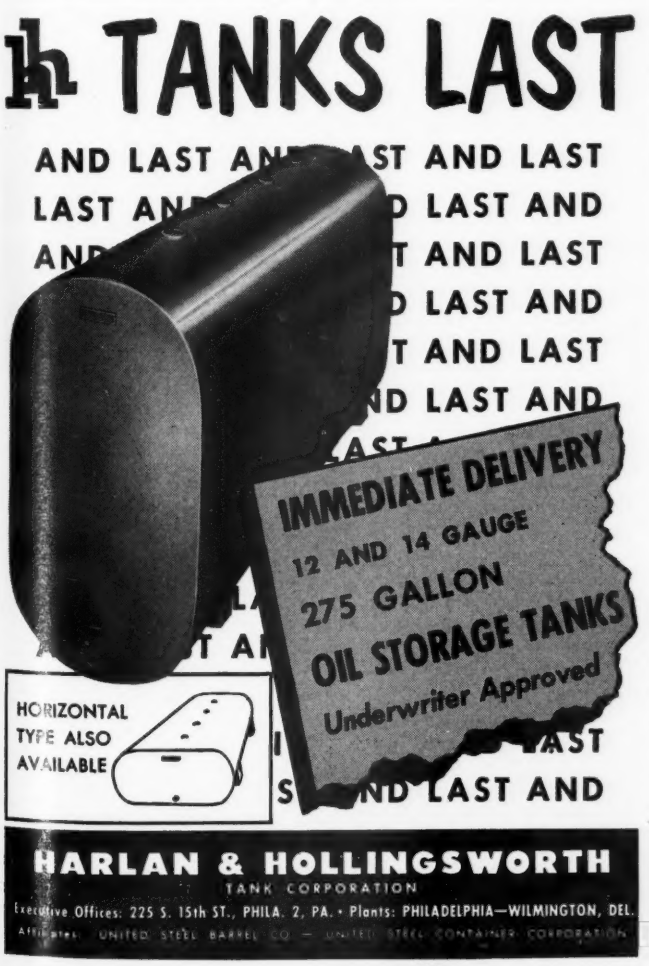
Barkow Mfg. announces central cooling Unit

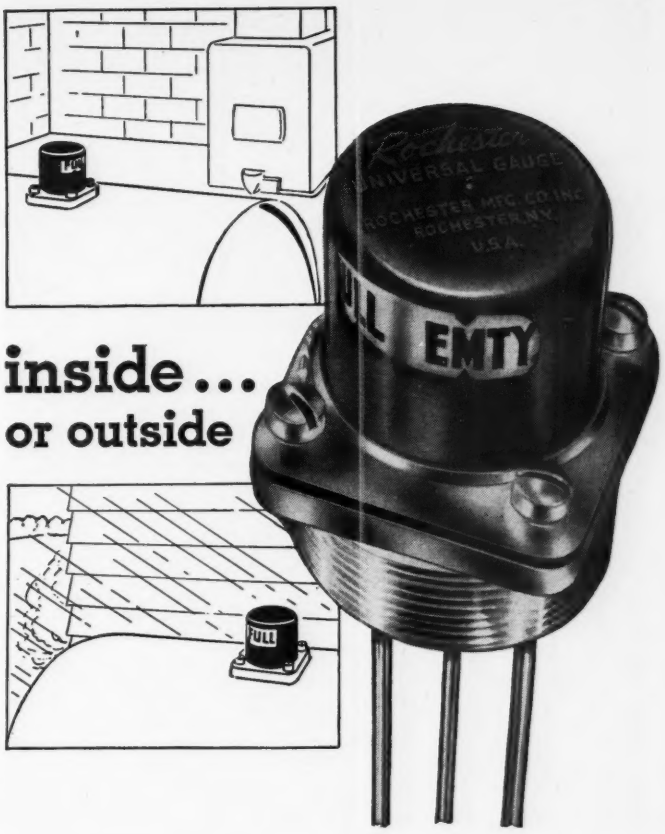
THE REFRIGERATION DIV., August G. Barkow Mfg. Co., has announced a residential central airconditioning unit. The unit is easily hooked up to any forced air furnace. Packed for easy installation and shipped assembled, it can be placed alongside of any forced air furnace and requires only two by three feet of floor space and is only three feet in height.



Requiring one electric and one water connection in addition to the duct work the unit is easily installed. The condenser is the cleanable type and is adaptable for cooling tower use, if necessary. Motor and compressor are hermetically-sealed with built-in overload compressor. In addition to the residential model, a commercial unit is available for smaller type installations such as barber shops and beauty parlors.

Made by: Refrigeration Div., Aug. G. Barkow Mfg. Co., Inc., 2230 South 43rd St., Milwaukee, Wis.





Rochester UNIVERSAL® oil tank gauge saves you money on ALL installations

STOCK ONLY ONE GAUGE! It's weatherproof . . . ideal for both indoor and outdoor service. Newly improved construction provides long, trouble-free operation. Saves you money two ways: in reduced inventory, and in lower maintenance costs.

ELIMINATE NUISANCE CALLS. New type plastic head is hermetically sealed . . . makes it absolutely leakproof, dustproof and shockproof. Pressure-tight, too.

NO FUMES OR SEEPAGE. There are no holes in the ROCHESTER UNIVERSAL Oil Tank Gauge. A permanent magnet transmits float-arm action from tank to indicator.

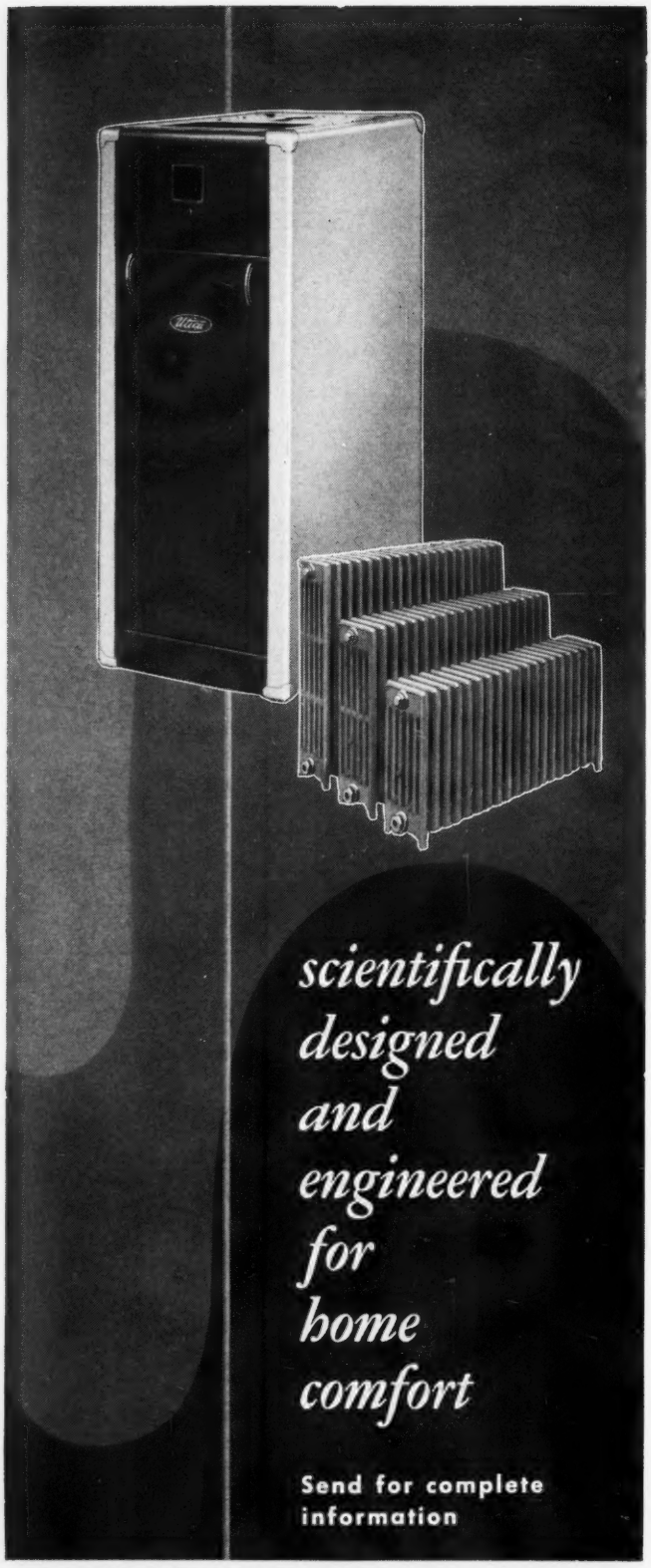
EASY-TO-READ "DUAL-DIAL" saves time and effort in checking and filling tanks.

EASY TO INSTALL and stocked by leading wholesalers everywhere for all standard oil burner storage tanks. Underwriters' approved. Rochester Manufacturing Co., Inc., 8 Rockwood Street, Rochester 10, N. Y.

OHI MEMBER OIL HEAT INSTITUTE OF AMERICA

Rochester
MANUFACTURING COMPANY, INC.
DIAL THERMOMETERS GAUGES AMMETERS

ROCHESTER DEPENDABLE ACCURACY GAUGES



UTICA RADIATOR
CORPORATION
UTICA 2, NEW YORK
BOILERS · RADIATORS
HEATING ACCESSORIES

Lee produces commercial-industrial space Heater

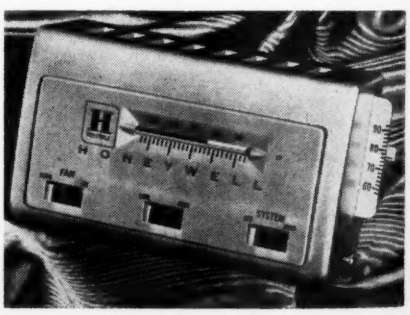
A UNIVERSAL DUTY heater, designed to be adaptable as a light weight "unit" heater, has been introduced by Lee Corporation. Models UDLO, UDHO and UDOG are fired with light oil, heavy oil, and combination light oil and gas respectively. The heaters which are equipped with a single separate induced draft fan, stainless steel or refractory combustion chamber and controls, come in models ranging from 300,000 to 1,500,000 Btu per hour and with vent stack diameters from 8 to 12 inches.

Designed for commercial and light industrial applications, the heaters have a slow speed fan requiring less horsepower and are completely shop assembled and flame tested. Equipped with adjustable outlets that may be moved to fit requirements, heaters require only a vent stack, wire connections and fuel lines to be put into service. An electronic eye provides the combustion safeguard.

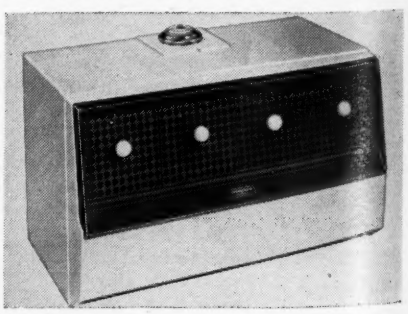
Made by: Lee Corporation, 1011 Tatnall Street, Wilmington, Delaware.

Honeywell develops combination heating-cooling Thermostat

MINNEAPOLIS-HONEYWELL now furishes a combination heating-cooling thermostat that features built-in selector switches that eliminate the need for sub-bases or separate control switch plates. A sensitive, low-voltage type instrument, it utilizes a thermostatic bi-metal element. The instrument is available in two models, T830A for one-stage heating and one-stage cooling and T830B for single-stage heating and two-stage cooling.



Finger-tip control is centered in three slide-type selector



The Wonderair, *a new addition to Servel's cooling line, is a window-type room air-conditioner for home or commercial installations that features single-dial operation. It is styled to blend with any interior decoration scheme. A novel feature of the conditioner is its all-plastic cabinet which considerably dampens noise and provides for quieter operation. Air flows through a four section grille which enables the occupant to guide the stream in any desired direction. Available in two finishes, mahogany or blonde, a five-year warranty is provided with each unit.*

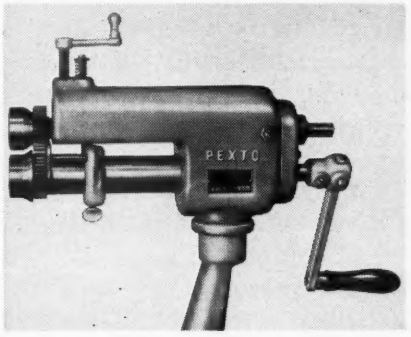
Made by: Servel, Inc., Evansville 20, Indiana.

switches built into the cover. One permits the entire system to be turned on or off, another permits the selection of either heating or cooling operation. A third enables the homeowner to have either continuous or intermittent fan operation.

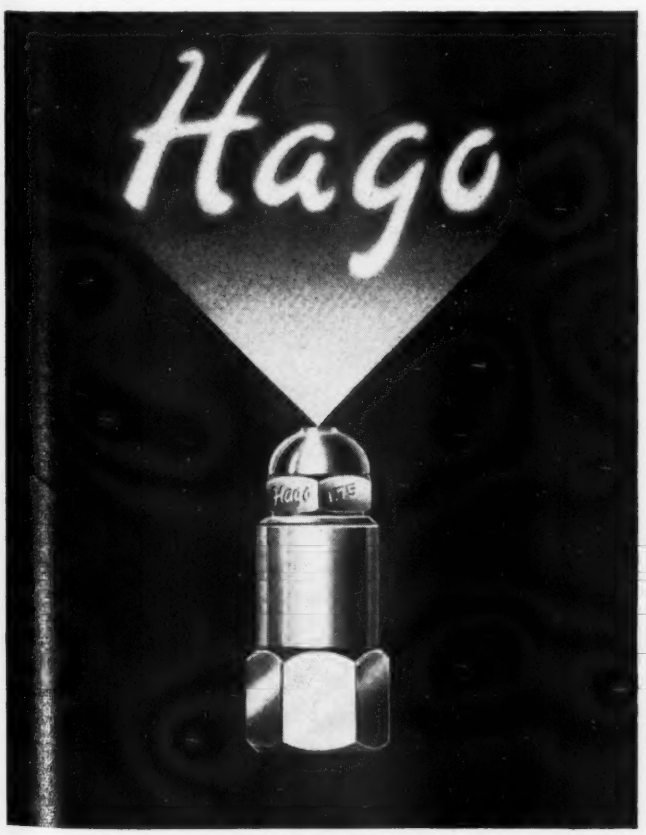
Made by: Minneapolis-Honeywell Regulator Company, 220—4th Ave., Minneapolis, Minn.

Pexto No. 621 Machine roll furnace Collars

THE PECK, STOW & WILCOX #621 furnace collar edging machine is fitted with new furnace collar edging rolls that raise a high flat shoulder and crimp the collar edge. The crimped edge can then be hammered down against the bonnet or plenum to form an air-tight, whistle-free joint with no notching required. The furnace collar edging rolls also are available separately for the 620 and 622 machines.



The Pexto machines have handle extensions on both upper and lower arbors and provision for setting the gauge on either side. As a result work can be fed toward or away from the worker while naturally turning the handle clock-



HAGO PRODUCTS

1281 SPRINGFIELD AVE. IRVINGTON 11, N. J.

HEAT-RESISTING
STEEL
SHEARED TO SIZE
for your
COMBUSTION CHAMBERS

If you are using or contemplating the use of heat-resisting steels for combustion chambers for oil burner furnaces, we are specialists in producing these types of steels.

Whether you are a large or small user of these steels, our steel making facilities can offer exceptional service by especially shearing to your specified combustion chamber steel blanks, or multiples thereof.

1 *More quiet burner operation*
2 *Cleaner heat*
3 *Better temperature control*
4 *Considerable savings on fuel costs*

Write us for additional information

ENGINEERING B-W PRODUCTION

Ingersoll STEEL DIVISION
BORG-WARNER CORPORATION
310 South Michigan Avenue, Chicago 4, Illinois
Plant: New Castle, Indiana

BASIC TEST TOOLS

FOR PROFITABLE SALES AND SERVICE

Combustion testing will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown above contains precision-made, quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, adjusting any make and type of oil burner for clean, trouble-free and economical operation, or running an efficiency test which will convince even the most skeptical customer on the need for replacement or modernization.

The FYRITE Utility Kit contains instruments for measuring not only CO_2, stack temperature and draft, but smoke in the flue as well. The inclusion of the smoke-measuring instrument is a forward step of significant importance to alert heating dealers and service men. Checking the flue gas for both CO_2 and smoke makes possible to adjust the burner with speed and ease for highest possible combustion efficiency, as well as for clean burning of the fuel resulting in heating plant performance that satisfies customers and safeguards against costly service requirements.

The FYRITE Utility Kit shown above is part of the complete line of Bacharach Service Instruments for the Heating Trade which, in addition to Combustion Testing Kits, includes Temperature Recorders, Grille Velocity Indicators, Pyschrometers, and specialized oil-burner servicing equipment. Your wholesaler will gladly supply any of these instruments.

BACHARACH Industrial Instrument Company
7301 PENN AVENUE • • PITTSBURGH 8, PA.

wise. Crimping, beading, wiring, burring and elbow edging rolls are also available.

Made by: The Peck, Stow & Wilcox Co., Southington, Conn.

Tuthill announces V-belt Pump for heavy Oils

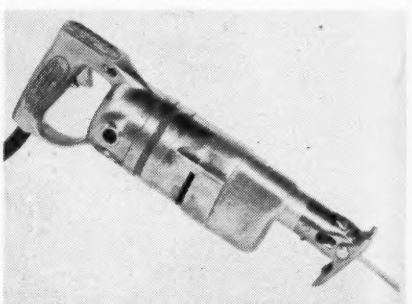
TUTHILL PUMP has introduced a new multiple V-belt drive pump unit for industrial oilburner service. Known as the type SU the unit features wide flexibility, along with other structural and performance advantages. A simplified motor mounting for motors up to 5 hp, a one-point belt tension adjustment; ball-bearing pillow blocks; pump and jack shaft direct-connected by flexible coupling; pump, jack shaft and pillow blocks available as a separate unit; and mounting bolts and adjustments readily accessible are announced features of the new heavy oil fuel pump unit.

Model CG with sleeve bearings is far maximum pressure of 150 psi and model CK with ball-bearings is for maximum pressure of 300 psi. Rotation must be specified as clockwise or counter-clockwise facing shaft end of pump, although rotation can be reversed in the field by interchanging vent plugs.

Made by: Tuthill Pump Co., 939 E. 95th St., Chicago 19, Ill.

Milwaukee Sawzall heavy-duty, self-contained portable Saw

THE MILWAUKEE SAWZALL, a compact, lightweight power saw, has a ¾" stroke with a 2,250 stroke-per-minute operation. It will cut through any substance, including masonite, formica, wirenails, wood, transite, galvanized sheet and other metals. Powered by a Milwaukee-built heavy-duty 110-volt Universal motor, it is equipped throughout with lifetime lubricated, anti-friction, roller and ball bearings. The saw, which comes equipped with a set of assorted blades and steel carrying case, measures 14½" long and weighs 6¾ lb.



Made by: Milwaukee Electrical Tool Corp., 5368 W. State St., Milwaukee 8, Wisc.

Marlow self-priming Pumps for fueloil delivery Trucks

MARLOW'S new types BG & CG centrifugal pumps for tank trucks have five drilled, tapped and plugged discharge openings for convenient installation. The openings are located top, front, back and both sides of the pump housing. All connections to the pump including the suction are female.

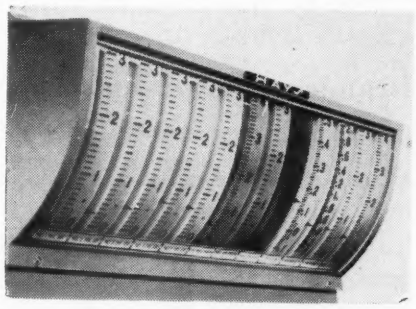
One-quarter inch tapped connections are provided on both suction and discharge side of the pump for gauges. Models may be obtained with either clockwise or counter-clockwise rotation, although all pumps will be supplied for counter-clockwise rotation at the input shaft unless otherwise ordered.

Complete iron construction is used and all models are supplied with enclosed type hydraulically-balanced impellers. The shaft seal is corrosion-resistant and self-lubricated and for all pumps used with petroleum products mechanical seals are provided. All pumps have mounting pads under the suction inlet and at the rear of the gear case.

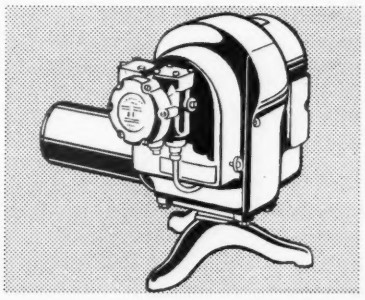
Made by: Marlow Pumps, Ridgewood, N. J.

Hays Vertiscale draft Gage has many specialized Features

HAYS VERTISCALE is a draft gage which incorporates such features as a three-way atmospheric vent; "one man" zero check; large identification label space; magnetic access door, fluorescent lighting for easy reading; removable units; no Paralax; dust tight case and Lucite scales.



JUST A PLUG FOR

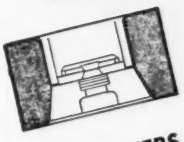


OIL THRIFTY HERCO

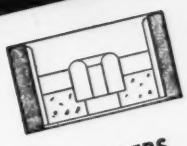
HERCO OIL BURNER CORPORATION
LANCASTER, PA.

FOR BETTER DOMESTIC HEATING INSTALLATIONS . . .

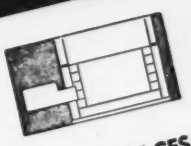
Select WALSH-MADE REFRACTORIES



OIL BURNERS

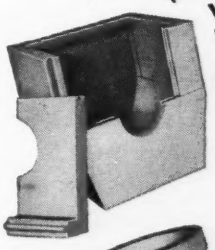


STOKERS



GAS FURNACES

Fuel savings for your customers . . . greater profits for you . . . are the extras you get in the complete line of Walsh-made products for the heating industry. That's because Walsh offers more in experience, skill and facilities as a dominant manufacturer of high grade refractories for over fifty years. Plus values in Walsh products are the result of careful selection of raw materials, modern production methods and exhaustive tests that assure top quality and utmost dependability.



Walsh-made PeTeCo Combustion Chambers — Precast interlocking combustion chambers that arrive at high furnace temperatures immediately . . . assure complete burning of oil . . . full efficiency.

Walsh-made PeTeCo Baffles — Tripod type precast baffles with burnt refractory legs. Saves fuel . . . increases efficiency of heating unit.

Walsh-made Refractory Castable — Walsh H & B Castable forms a durable, one-piece air and gas tight lining. Sets up stronger. Lasts longer.

WRITE FOR CIRCULAR

Free bulletin describing the unusually complete line of Walsh refractories for the domestic heating industry will be sent upon request. Contains helpful information, specifications, sizes, etc. Send for copy today.

WALSH REFRACTORIES CORPORATION
ST. LOUIS, MISSOURI, U.S.A.

FOR OVER 50 YEARS
MANUFACTURERS OF HIGH GRADE REFRACTORIES

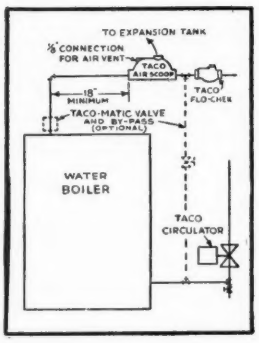
101 Ferry Street • St. Louis 7, Missouri
FACTORIES: ST. LOUIS, MO. AND VANDALIA, MO.

To Remove Air and Noise from Hot Water Heating Systems

Buy Taco

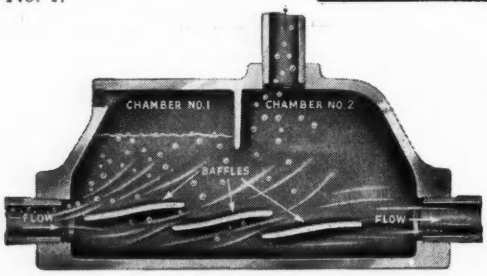
AIR SCOOP

You can solve your air problems with Taco's new AIR SCOOP. When the system is first filled, *all* you do is vent the radiators and high points. The job is then finished. No draining water. No repeat operation. No cutting or adjustments. No going back to job.



Here's How Taco Air Scoop Works

Air bubbles are scooped up by baffles and accumulate in chambers No. 1 and 2. Air from No. 2 goes to expansion tank and, when tank is filled, backs down into Air Scoop and passes through air valve from chamber No. 1.



Enthusiastic Customers Say

1 "Air Scoop's the answer to the air problem".
2 "Won't install another hot water job without Taco Air Scoop".
3 "Does everything you claim for it".
4 "Air Scoop cured a real headache for me".
5 "Stopped all gurgling in my system".

Better Heating-Better with Taco

Taco

TACO HEATERS, Incorporated
137 South Street • Providence 3, R. I.

READ TACO'S OTHER ADS IN THIS ISSUE

The Vertiscale basic operating mechanism consists of a diaphragm, enclosed in a cast metal housing, the force and movement of which is balanced against the force of calibrating springs. The resultant force and movement of the diaphragm is transmitted through linkage to the pointer to indicate the magnitude of the draft, pressure or differential to which the diaphragm element is subjected.

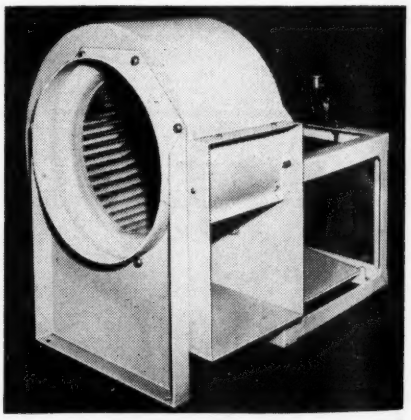
From one to twelve units of the Vertiscale can be mounted side by side in a single case. Streamlined in design this new gage is available in four types of mounting to meet special requirements of individual installations; a semi-flush mounting; a recessed mounting for above eye-level reading; an eye-level mounting and a projected or lug mounting.

The gages can be obtained with a spring loaded metallic bellows for indicating functions such as level, flow, temperature, and pressure pneumatically transmitted by other instruments. Ranges from 2″ of water to 120″ of water, draft, and differential can be provided.

Made by: Hays Corp., Michigan City, Ind.

Brundage Blower-Exhauster for commercial-industrial Use

A COMPACT blower-exhauster that solves ventilating, smoke, heat and fume removal problems for industrial plants, hotels, restaurants, hospitals, schools and other institutions is now offered by Brundage.



This new exhauster does not require a cabinet or complicated super-structure. It can be fastened directly to a wall, up out of the way. The angle of discharge can be adjusted to any degree. Motor, bearings and all other parts are designed for long-lived efficiency and quiet operation.

Made by: The Brundage Company, 504 N. Park St., Kalamazoo, Michigan.

Adams cast-iron flue Thimbles improves Draft

ADAMS cast-iron flue thimbles are designed to provide greater permanence and tighter smoke pipe fit. Because of their construction and lacquered finish, they will not rust out. Available in 9 sizes extending from 4″ to 12″ diameters, larger thimbles are available if specified.

One special model with 6″ diameter is designed to go through the wall before entering the chimney. Packed in barrels they have depths extending from 2½″ to 3″ depending upon the diameter.

Made by: The Adams Co., Dubuque, Iowa.

Crown fueloil Saver firebox type Baffle

A CROWN-TYPE firebox baffle, which stands on four legs over a combustion chamber, has been developed by Dominion Ceramic, specifically designed for conversion jobs fired with a gun oilburner. Constructed of specially-mixed, artificial abrasives, the baffle's function is to retard the flow of flue gases while the burner is running and, when the burner shuts down, to radiate heat which it has absorbed.

Each baffle is made to fit the individual boiler or furnace in which it is to be installed. Models for industrial burner application also are offered. The baffles are described as having a safety factor of 1,000° beyond the requirements of its function. They are guaranteed for seven years against heat, shock or disintegration.

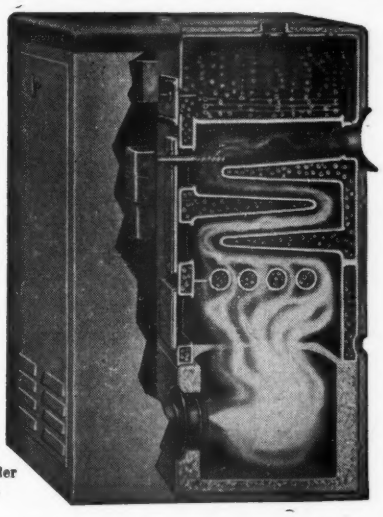
Made by: Dominion Ceramic Works, 20 Bank St., Toronto 3, Canada.

New Decal provides for easy truck Lettering

AMERICAN DECALCOMANIA now offers a more durable type decal for truck decorating and lettering. The new type "R" utilizes a special adhesive, eliminating complicated varnish or cement applications and guarantees positive adhesion and excellent resistance under all types of climatic conditions. The "R" decal, which is washable, can be applied to most any type of surface, finished or unfinished, air dried or baked, and can be produced in any number of colors.

Steel HEATING UNIT

5 YEAR GUARANTEE AGAINST LEAKS



Licensed under U. S. Pat.

We have just appointed Morris Company as sole distributor, covering the territory of the State of New York and Northern New Jersey, with new offices at 44 East 23rd Street, New York 10, New York—phone GRamercy 7-8052.

Magic-HEAT

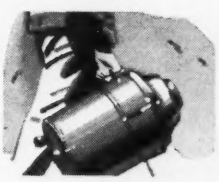
Product of MARIETTA METAL PRODUCTS CORPORATION
MARIETTA, PENNA.

Portable business detector

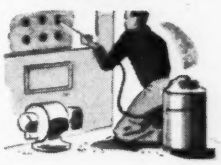
IT'S ALL HERE — hose and tools are carried in the container.

OHI

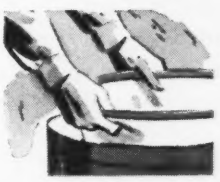
A Pullman furnace and boiler vacuum cleaner pays for itself by getting you into the cellar where profitable service jobs are detected. Year after year, more and more Pullmans are in use because it is:



QUICK TO SET UP Pullman is carried in by one hand; weighs only 30 lbs. Has no outside bag to snag or tear. **CONVERTS IN 2 SECONDS TO A POWER BLOWER.**



QUICK TO USE Powerful, heavy-duty motor creates a strong suction that cleans thoroughly without retracing strokes.



QUICK TO EMPTY 1½ bushel electro-welded container holds full day's work. Throw-away paper filters maintain maximum suction; makes disposal easy.

MFR: PULLMAN VACUUM CLEANER CORP., Boston 19, Mass.

PULLMAN VACUUM CLEANER CORP., BOSTON 19, MASS.

Without obligation to myself, please have my local jobber give me a 5-minute demonstration of the Pullman Vacuum Cleaner.

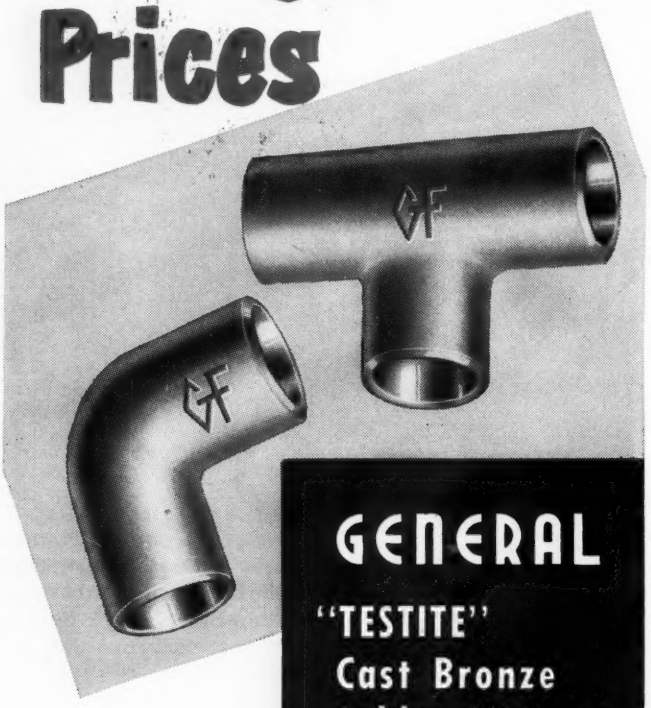
SIGNED _____

COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

Get Premium Quality at Regular Prices



GENERAL
"TESTITE"
Cast Bronze
Solder Fittings

YOU get the highest quality fittings at no higher cost when you buy GENERAL "Testite" Cast Bronze solder fittings. GENERAL'S modern manufacturing methods, automatic operations, and 100% air-under-water "Testite" inspection keep prices low and insure perfect performance of every fitting.

Here are some of the extras you get when you sell or specify GENERAL "Testite" fittings: uniformly high-grade castings . . . smoother inside surfaces that reduce turbulence...accurately machined tube sockets for precise fits and easier soldering. Available for immediate shipment. Write for detailed folder. General Fittings Co., 125 Georgia Ave., Providence 5, R. I.

GENERAL GF

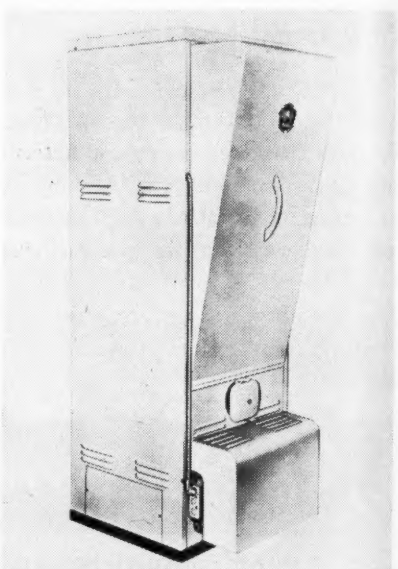
TANKLESS AND INDIRECT
WATER HEATERS AND HEATING SPECIALTIES

The "Bak-Cal" is a special type decalcomania specifically designed for marking and decorating metal products which are subjected to high temperatures. Upon being subjected to higher temperatures the new "Bak-Cal" transfer bakes itself into the metal or finish taking on advantages of baked enamels. It is durable, washable and abrasion resistant and easily and quickly applied to finished or unfinished metals. Because it adheres instantly to the surface to which it is applied immediate packaging of product is allowable.

Made by: American Decalcomania Co., 4344—5th Ave., Chicago 24, Ill.

Conco Counterflow for perimeter Installations

A CONCO-RANCHIEF counterflow furnace, with 70,000 Btu capacity, has been announced, increasing to 18 the models in the line. The new unit for perimeter installations can be fired with gun type or vaporizing oil-burners or gas-burner and is shipped completely assembled and wired, including controls. All are fire-tested before shipment.



Among its features are increased blower capacity and compactness. The furnace can be installed in utility rooms or closets as small as 24" by 34", with top flue outlet and front accessibility. The new Ranchief, like other models in the line, is finished in white enamel.

Made by: Conco Engineering Works, Mendota, Ill.

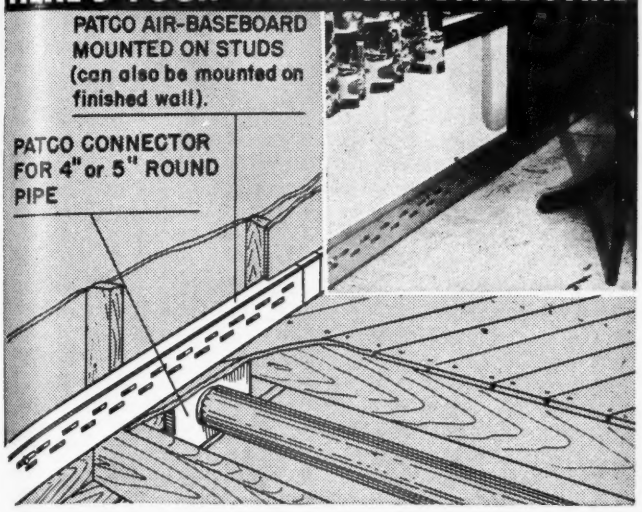
Holan utility Compartments for truck pick-up Bodies

UTILITY COMPARTMENTS, manufactured by Holan, are of high tensile steel construction and greatly increase the efficiency of truck pick-up bodies by providing space for carrying service equipment and tools. The compartments, designed for mounting on bodies up to 1½ ton capacity, can be installed in a few hours and do not reduce the inside area as they are mounted flush to the body.

Available in models 72, 84 and 105 inches long, with two door openings, they have removable trays installed in both right and left side compartments which vary from 22 to 46 inches in length depending on what side of the body they fit. Handles are flush with body side and will not jam or knock off.

Made by: J. H. Holan Corp., 4100 West 150th Street, Cleveland, Ohio.

Plumbing & Heating Contractors
HERE'S YOUR WARM AIR BASEBOARD



PATCO AIR-BASEBOARD nails to studs or finished wall — connects to furnace with pre-fab. PATCO CONNECTOR and 4 or 5 inch dia. sheet metal pipe — NO SHEET METAL DUCT WORK — CLEAN, LIGHT, ONE-TWO-THREE job.* WRITE FOR PATCO INSTALLATION MANUAL AND SEE PATCO AIR-BASEBOARD AT YOUR PLUMBING AND HEATING WHOLESALER OR DISTRIBUTOR.

PATCO AIR-BASEBOARD
THE WELLS RADIATOR CORP.
PATENT PEND.

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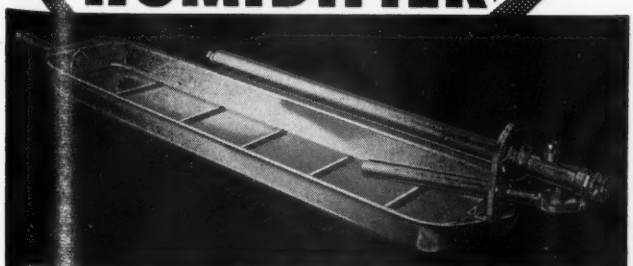
Patco

231 N. BREAD STREET, PHILADELPHIA 6, PA.

MORE PROFITABLE TO INSTALL

THERMO-DRIP AUTOMATIC HUMIDIFIER



- VALVES DON'T LIME UP
- NO STAGNANT POOL TO REHEAT
- SUPER-SENSITIVE THERMOSTAT
- OUTSIDE SCREW ADJUSTER
- EASY INSTALLATION
- ONE KIT TO PURCHASE

Our volume sales prove it... Thermo-Drip gives furnace owners greater customer satisfacton.

Prospects easily see the advantages of humidifying by automatically dropping water on a sizzling hot stainless steel pan.

Too, it's easy to demonstrate why this method is the *most efficient, most dependable* way to put moisture in the air.

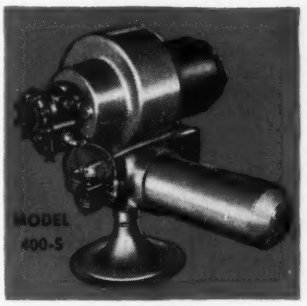
Yes—Thermo-Drip gives *faster, most efficient vaporization.*

Write today for FREE literature. Dept. FO-43

AUTOMATIC HUMIDIFIER COMPANY • Cedar Falls, Iowa

U.S. NEWS

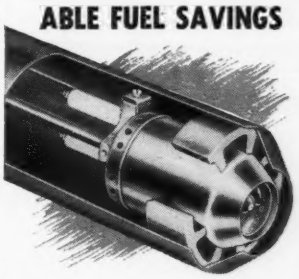
U. S. Oil Burners OUTSELL the Next 5 Leading Brands Combined in Hartford, Conn.



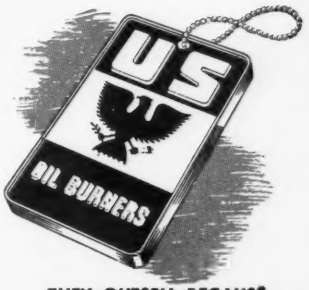
Here's The Oil Burner...

that can give you a reputation for handling the finest burners ever designed . . . plus profits that really speak for themselves.

***HTCH INSURES REMARKABLE FUEL SAVINGS**



This amazing HTCH is now available in models ranging from 0.50-12.00 G.P.H. A tremendous market, including homes, churches, theaters, schools, apartment houses, is waiting for the aggressive heating contractor who can sell these burners that pay for themselves in fuel savings. Complete information is available through your supplier. If he does not have it, contact us direct.



THEY OUTSELL BECAUSE THEY EXCEL

PROVES WHAT REALLY CAN BE DONE WITH A GOOD OIL BURNER LINE!

Mr. Heating Contractor:

Here's a success story that no heating contractor with an eye to a bigger, better business can overlook. Based on the official records of oil burner permits issued by the City of Hartford Building Department for a period of 20 months . . . oil burners of U.S. manufacture outsold the next five leading brands combined by 33% . . . with more than 100 brands represented! The increased demands by consumers and dealers alike for U.S. Oil Burners during this period was such that *twice as many burners were sold as the combined total of the next five leading brands.* (See chart below.)

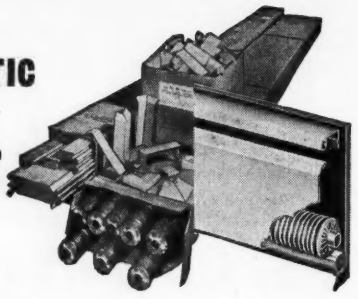
Mr. Wholesaler:

Hundreds of inquiries have been received, many of which have possibly come from your own area. You take pride in serving your trade with the best. We take pride in serving you! Write today for details on how we can help you to serve them with the best!

Distributors and Dealers! *What was done in Hartford can be done right in your community . . . and it can mean BIG PROFITS for BOTH OF YOU and COMPLETE SATISFACTION FOR YOUR CUSTOMERS. LET'S "TEAM UP" FOR YOUR AREA.*

U. S. BURNER DIVISION
THE CARLIN COMPANY, WETHERSFIELD, CONNECTICUT

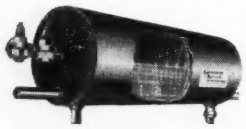
GENERAL AUTOMATIC
FLOORLEVEL
BASEBOARD HEAT
in a real PROFIT PACKAGE!



Complete systems, either Hot Water or Warm Air, ready to install! Packages available to meet any size installation requirement.

CURE SICK AIR INFLATED HOT WATER HEATING JOBS!

General Automatic De-Airator Tank removes gas and vapors generated by boiler before they reach the system. Removes air entrained in the water before it is returned to the boiler. Makes all hot water heating systems 100% effective . . . install it on your jobs!



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Tells you how to increase sales, profits and customer satisfaction with FLOOR-LEVEL.
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GENERAL Automatic
General Automatic Products Corp.

Representatives in principal cities
Canadian Representative: Heating Equipment Co., Ltd.
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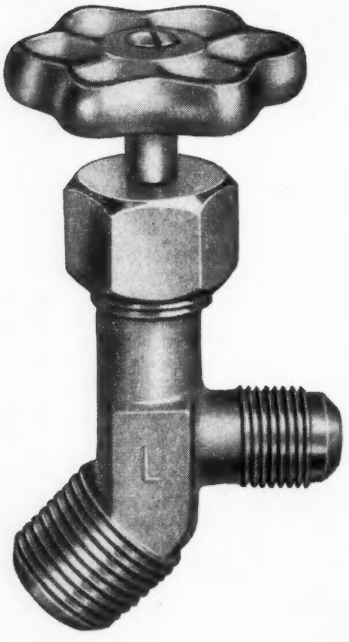
★ LINCOLN MASTERLINE ★

SERIES 5365
OIL TANK VALVE
(ANGLE TYPE)

Furnished in flared 3/8" or 1/2" outlet ends and 1/2" or 3/4" tapered pipe thread inlet.

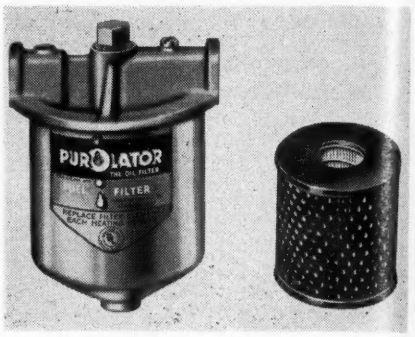


Write for further information

LINCOLN BRASS WORKS, INC.
2051 12TH STREET • DETROIT 16, MICH.

Purolator's micronic Filter features depressed Head

PUROLATOR announces a micronic oil filter designed to give better protection for small and medium-sized burners. The new filter features a depressed head for non-spill removal of the replaceable element that traps all dirt, tank and pipe scale, and solid impurities exceeding a dimension of 5 microns (0.0002 of an inch). The replacement element has over 200 sq. in. of filtering surface and gravity flow capacity of more than 100 gph. This refill is interchangeable with two popular brand filters on the market today.

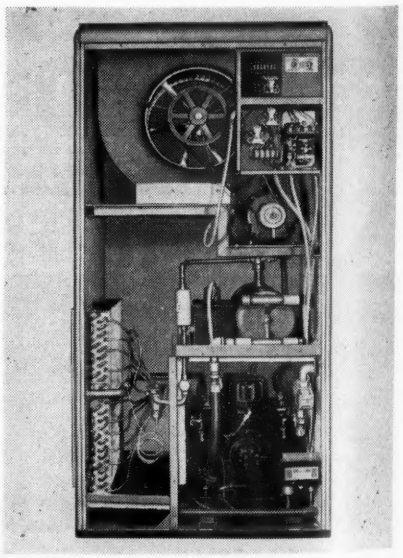


Installation of the filter is simple and it is designed to provide maximum protection to the fine spray nozzle and pump parts from erosion due to continuous scrubbing effect of scale particles. The micronic element is rated for 7,000 gallons per year dirt retention life.

Made by: Purolator Products Inc., Rahway, N. J.

Bryant Command-Aire Twins combine Heating, Cooling

BRYANT HEATER now is producing a new year-'round home conditioner system priced for the average income family bracket. The combination product, called Command-Aire Twins, consists of a gas or oilfired furnace ranging from 50,000 to 175,000 Btu per hour and companion air-conditioner with capacities of 2, 3, or 5 tons. The units can be operated together or separately, at option. Of matched design, each has its own blower air filters and controls; one unit can be installed at the time of home construction and its twin added later at the convenience of the home owner.



In the event of later installation of either unit the only adjustment required is substitution of a larger plenum and a minor change in return air connections. The twin units occupy as little as 7 2/3 sq. ft. of space fully installed. The 2 and 3-ton capacity airconditioners are equipped

with hermetically sealed compressors carrying a five year warranty.

There is also a five-ton cooling conditioner with a semi hermetically sealed compressor. The refrigerant condenser is a new water cooled shell and coil type with a dual pressure control that shuts off the unit in event of water supply failure or other abnormal operations.

Made by: Bryant Heater Division, Affiliated Gas Equipment Company, 17825 St. Clair Ave., Cleveland, Ohio.

Milos offers new, patented tube-type bearing Oiler

A TUBE-TYPE OILER for motor bearings equipped with a special metering valve for controlling oil flow is now being produced by United States Petroleum Company. Applied in three easy steps it remains in position over the oil cup and automatically lubricates the bearing over a long period of time by metering the oil as needed.

The supply of a constant film of oil to the bearing eliminates frequent lubrication checkups, reduces bearing wear and increases motor life. The manufacturer states that it is especially useful when bearing oil cups are in concealed or difficult "to get at" places. The oilers are packed three dozen to the carton and can be used with oilburner, fan, circulator and airconditioning motors.

Made by: United States Petroleum Co., 104 Lakeview Ave., Clifton, New Jersey.

ORAN offers the unique NEW DUAL-AIR vaporizing burner in ALL Shallo-Well Oil Fired floor furnaces

Underwriters' Listed

Only 34" deep, NO GROUND CLEARANCE NEEDED!

Oran's amazing, new Dual-Air vaporizing burner is one of the greatest advancements ever made in vaporizing-type burners. This unique unit burns smoke-free, even under adverse draft conditions, with oil savings up to 15%!

There are four Oran Shallo-Well models for small homes, to meet climatic conditions anywhere in the nation. They are available in ratings of 50,000, 65,000 and 75,000 BTU.

Besides our complete line of famous oil fired floor furnaces, Oran Company also manufactures a complete line of gas fired floor furnaces, and oil and gas fired central heating systems.

WRITE TODAY FOR FULL INFORMATION!

ORAN COMPANY

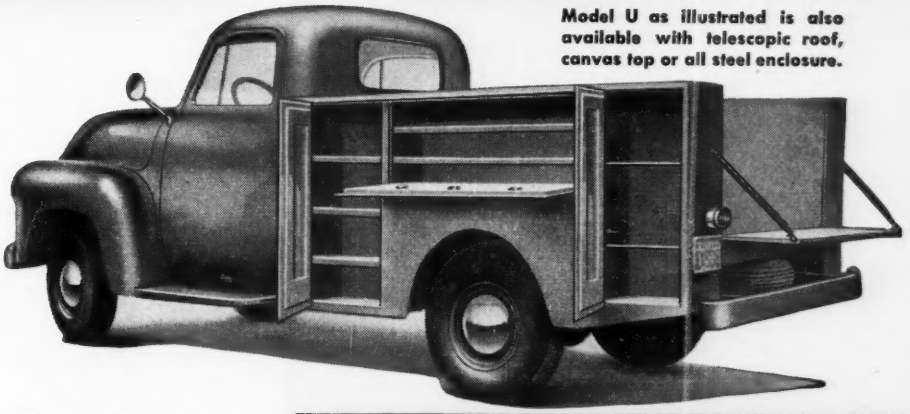
2220 S. Third St., Columbus 7, Ohio

ORAN

GREATER STRENGTH • UTMOST SECURITY • LOWEST COST • HIGHEST VALUE

SPECIALIZED UTILITY BODIES FOR ALL PURPOSES

"Bodies you can depend on" result from the skill, quality and integrity that goes into every Morysville unit. Made by expert craftsmen from 14 and 16 ga. body steel on heavy U channel under structure these bodies are the strongest in the industry.



Model U as illustrated is also available with telescopic roof, canvas top or all steel enclosure.

All compartments are weather sealed. Perfect fitting doors with recessed spring loaded locks and many other advanced features to meet your particular requirements.

WRITE FOR CATALOG AND PRICES.

MORYSVILLE Body Works

813 SO. READING AVE.
BOYERTOWN, PA.

DISTRIBUTORS IN PRINCIPAL CITIES EAST OF THE MISSISSIPPI

PROFIT NOW!

WITH

GRAND RAPIDS FURNACE CLEANERS

It's easy to get a lion's share of furnace cleaning profits when you use a Grand Rapids Furnace Cleaner. Greater cleaning capacity, handling ease and practically designed groups of furnace cleaning attachments help you give better service and clean more furnaces per day at a higher profit.

Act now! Write today for complete information and prices.

DOYLE VACUUM CLEANER CO.

233 Stevens St., S. W. **Grand Rapids 7, Michigan**

COLE AUTOMATIC DRAFT CONTROL

for stove and space heaters. Friction free. Knife edge bearings. 7 standard models—from 4" to 7". Also controls for every domestic and industrial application.

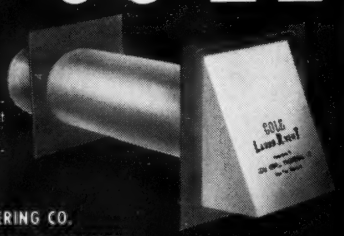
GET THE VERY BEST

COLE

AT THE VERY BEST PRICES!

COLE LAUND-R-VENT

for automatic clothes dryers. Friction free. Rust and ice proof. Built entirely of aluminum. 3" and 4" sizes. Prices start at $2.80. Complete kits available.



COLE-SEWELL ENGINEERING CO.

2288 UNIVERSITY AVENUE • ST. PAUL 14, MINNESOTA

Lepick Heat Reclaimer for use with space Heaters

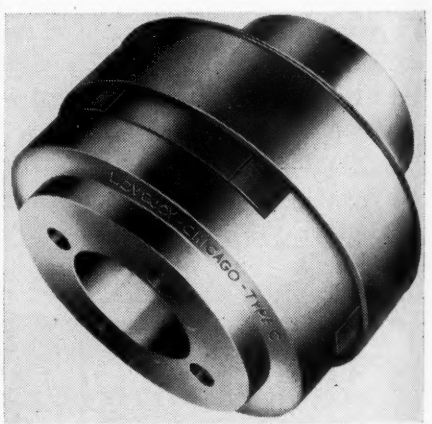
LEPICK HEATER COMPANY'S smoke pipe heat reclaimer is made for installation in the stove pipe of oil, wood or coal space heaters. The reclaimer salvages and diverts waste heat passing up the chimney into a specially-designed unit; a thermal control then starts a fan and the warmed air circulates throughout the room.

Equipped with a 110 volt AC, 30 watt, shaded-pole electric motor, the unit has an air delivery of 201 cfm and a velocity of 480 fm. It connects to 4", 5" and 6" stacks and has a built-in flue cleaner feature. Heat output is 18,000 Btu's per hour with a stack temperature of 839°F.

Made by: Lepick Heater Co., 1742—4th Ave. South, Seattle 4, Wash.

Lovejoy Coupling modified to "crawl into Flywheel"

A MODIFICATION of Lovejoy's type C coupling entails cutting off one hub from a standard model. Three or more holes are tapped in the remaining flange, by which the coupling is fastened to the center of the flywheel. By "crawling" into the flywheel itself, the modified coupling saves the space normally occupied by conventional hub-length, and, in addition, cuts costs by elimination of the flange.



In all other respects—collar, load cushions and inside sleeve—the modified model is identical with the regular type C coupling.

Made by: Lovejoy Flexible Coupling Co., 5012 W. Lake St., Chicago 44, Ill.

Sylphon Expansion Joint for simplifying heating Problems

A SYLPHON Packless Expansion Joint for hot water lines, No. 96066, is designed to simplify heating and construction problems. The Packless Expansion Joint provides a means for absorbing expansion of baseboard radiation, finned convectors, horizontal supply line, etc. It is a complete, factory-assembled unit, and can be easily installed or removed from the line.

A two-ply seamless Sylphon bellows absorbs pipe-line expansion and provides a positive seal against leakage. The bellows is made of phosphor deoxidized copper for extra corrosion resistance; other parts are made of brass. The Sylphon Packless Expansion Joint is presently being made for pipe sizes ¼", 1", 1¼" and 2". Absorbs line expansion

PUT YOURSELF IN THIS Dealer's Shoes!

● To get out in front and stay there, put yourself in a Thatcher dealer's shoes—try 'em on for "sales" and you, too, will agree that Thatcher offers you every plus feature that you want and need.

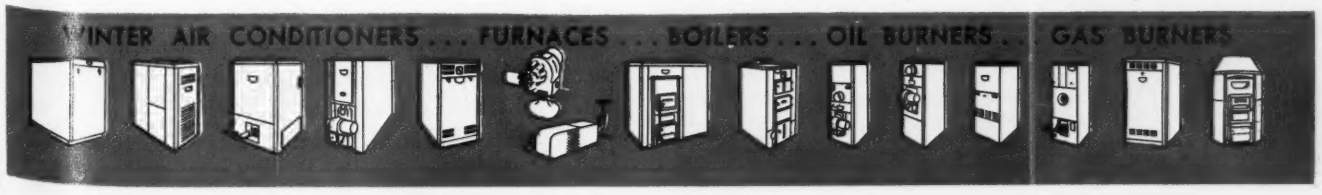
With Thatcher heating equipment you get maximum selection . . . No matter what the heating problem (gas, oil, or coal) Thatcher has the correct model and size to meet the need. Each unit is the result of constant progress in design—the last word in easy erecting — to assure you less work, less time, less cost.

As a Thatcher dealer you're backed with helpful technical and sales promotional assistance. What's more, you are selling a quality product of proven performance — equipment that permits you to say "yes" with enthusiasm to every question about cleanliness, safety, convenience, dependability and automatic, carefree operation.

Yes, to put yourself in a Thatcher dealer's shoes is just plain *good* business. Why not take the first step now. Write Thatcher Furnace Company, Garwood, New Jersey for our new catalog containing all the facts!

the oldest name in heating!

Thatcher
FURNACE COMPANY
Specialists in heating Since 1850



AIROUT

WHAT IT IS . . .
AIROUT is a liquid chemical deoxidizer that removes excess oxygen from hot water heating systems and prevents corrosion without affecting heat transfer. It is a "must" for all hot water heating systems: panel, radiant, convector, etc. Available from your wholesaler in 1/2, 1 and 5-gallon cans.

HOW IT WORKS . . .
AIROUT absorbs the excess oxygen present in the water, preventing it from being released when the water is heated. It thus eliminates the "air binding" of lines, radiation, etc. Use it on your next job.

Send for folder of 40 other Quality S.O.S. Products for the Heating and Plumbing Industry.

S.O.S. PRODUCTS COMPANY INC.
282 NASSAU AVENUE
BROOKLYN, N. Y.

MONEY BACK GUARANTEE

S.O.S.

CHAMPION
Sprayon
FREON PROPELLED AEROSOL BOMB PRINCIPLE
Sensational INSTANT PAINT!

Plumbing and Heating Contractor's Friend
Used Across America

Excellent for Painting or Touching Up

Radiators	Convectors
Boilers	Furnaces
Water Heaters	Fin Pipes
Piping and Cocks	Air Conditioning Equip.
Refrigerators	Oil Burners
Oil Tanks	And 101 other uses

For better work and profit! No mixing, no clean-up, no compressor or hose needed. Just shake the can and paint. New type can with new guaranteed non-clogging inner mechanism. Complete your jobs the modern way. Ask your jobber for Sprayon today!

Attention Representatives! Some select territories still open. Write for money making details today!

COLORS: Chrome Aluminum • Gloss White • Gloss Black • Meadow Green • Bright Red • Medium Gray • Royal Blue • Ivory • Bright Gold • Copperplate • Yellow • Clear Plastic • Black and Aluminum Lacquer • Black Undercoater

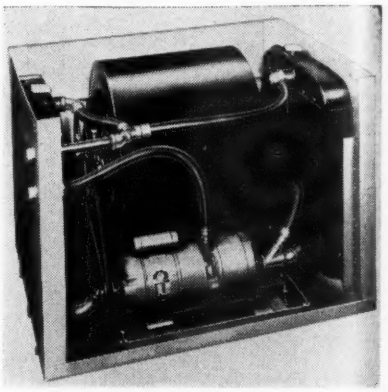
CHAMPION BRONZE POWDER & PAINT CO., Inc.
F 2526 W. VanBuren Chicago 12, Ill.

up to 1/2", which is sufficient for 30 feet of copper line on 140° temperature rise or 40 feet on 110° rise. Maximum working pressure 40 psig; maximum test pressure, 60 psig.

Made by: Fulton Sylphon Div., Robertshaw-Fulton Controls Co., Knoxville, Tenn.

Airtemp "Water Saver" for small Airconditioners

WATER SAVER, water-cooling and recirculating unit, is being made available to owners of comparatively small air conditioning installations. It has been developed for use with Airtemp's 3 hp packaged residential and small-store conditioners.



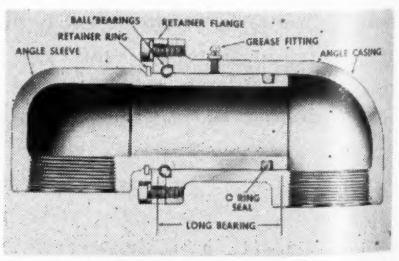
The Water Saver provides a steady flow of cooled water to the air conditioning equipment at proper operating pressure. The sealed-in water coolant prevents scaling and corrosion—caused by mineral elements in many water sources—likely to clog pipes and reduce air conditioning efficiency.

In normal operation of an air conditioner, the conditioner removes the heat from the air and transfers it to water which is normally run to a drain. It is at this point where the Water Saver functions. The Water Saver receives this heated water and retransfers the heat from the water to outside air. By forcing the warm water through two automobile-type radiators, while a high-capacity blower draws outside air through the radiators, the water is cooled, then returned to the air conditioner in a continuous cycle.

Made by: Airtemp Division, Chrysler Corp., Dayton, Ohio.

Barco announces new Line of ball bearing swing Joints

INTRODUCTION of a new line of ball bearing equipped swing joints for use on loading and unloading lines handling oil, gasoline, chemicals, and other liquids was announced by Barco.



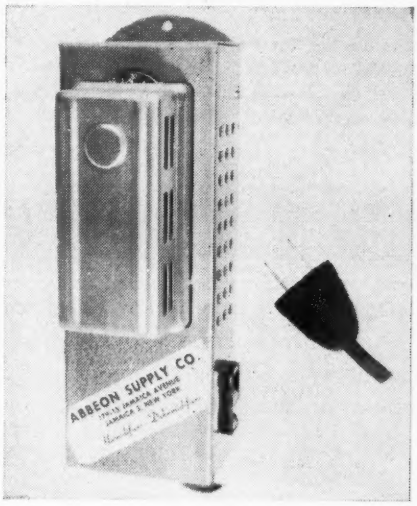
The design is distinguished by a long lubricated bearing which provides support for piping and an exclusive method of positioning the ball bearings which prevents them from falling out when the joint is taken apart. Sealing is by means of an "O" ring confined in a recess in the sleeve of the joint. Special "O" rings are provided for

handling fueloil without softening, swelling or deterioration at any temperature from —30°F. to +250°F. These joints also are suitable for pressures as high as 1500 psi hydraulic, depending on size and service.

Made by: Barco Mfg. Co., 1801 W. Winnemac Ave., Chicago 40, Ill.

Humidity controller gives automatic humidistat Control

A "PLUG-IN" humidity controller, made by Abbeon Supply Co., is an automatic humidistat control which operates electrically powered humidifiers and dehumidifiers.



This control operates in much the same way as a room-type thermostat. The control is hung on the wall and the dial is turned to the percentage of relative humidity desired. When used as a dehumidifier control, if the humidity rises above the setting, the control will turn on the dehumidifier. When the humidity falls below the set

HomEase is the Burner that offers you the Exclusive

FLAME-IZER ... *high CO_2 flame-fitting to the individual fire-box, quickly, easily!*

FIRE-STAT ... *more starting air—thus less sooting and smoking on cold starts!*

MORE SALES.. GREATER PROFITS *easily!*

VARIOUS MODELS: .5 to 15 gph

HomEase has an important place in thousands of homes ... has thousands of satisfied owners ... it should have an equally important place with *you*. Get the all-important facts, *Now*

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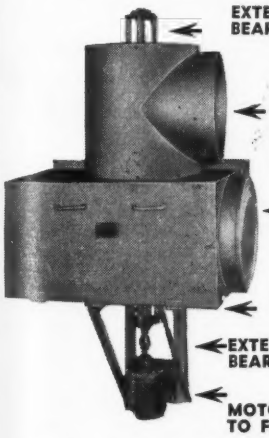
HOMEASE

OUR REPRESENTATIVES SEE VOL. III THOMAS REGISTER

ARVINS DRAFT INDUCER

(Patent Pending)

PRODUCES ADEQUATE POSITIVE UNIFORM DRAFT REGARDLESS OF WEATHER CONDITIONS DEPENDABLE AND TROUBLE-FREE PERFORMANCE



EXTERNALLY MOUNTED SELF-ALIGNING BEARING NOT SUBJECTED TO HEAT.

DISCHARGE OUTLET MAY BE ROTATED 360 DEGREES TO ANY POSITION TO SUIT LOCATION OF STACK OPENING — SAVES ON COST OF BREECHING.

BAROMETRIC CONTROL INTERCHANGEABLE TO EITHER SIDE.

HINGED ACCESS DOOR FOR TUBE CLEANING OR REPAIR (OPTIONAL).

EXTERNALLY MOUNTED SELF-ALIGNING BEARING NOT SUBJECTED TO HEAT.

MOTOR MOUNTED ON ADJUSTABLE LUGS TO FIT ANY STANDARD MOTOR.

ARVINS DRAFT INDUCERS:—

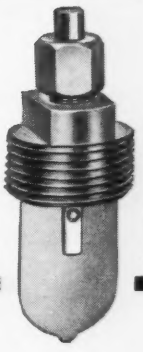
- May be installed in vertical or horizontal position.
- Eliminates transition pieces.
- Available with speed controllers or with variable speed belt drive.
- Cuts installation cost—saves space.
- Unique and exclusive features.
- Capacities 500 to 80,000 sq. ft. E.D.R.

Manufactured by

ARVINS-VISCOLATOR CORPORATION

123 DeKalb Ave. Brooklyn 17, N. Y.

MAID-O'-MIST Balancing Valve ADAPTER UNITS



convert tees into balancing valves!

No. 14 — for copper or bronze tees. Nominal pipe sizes ⅜", ½", ¾", 1".

No. 15 — for cast iron tees. Sizes ½", ¾", 1", 1¼".

These new units are quickly soldered, sweat-fitted or screwed into tees. No restriction of hot water flow except for balancing needs.

- *For baseboard radiators*
- *For convector radiators*

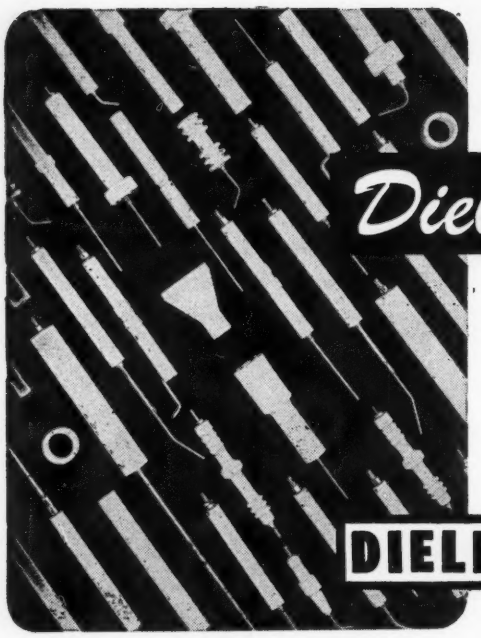
PROMPT DELIVERY FROM YOUR JOBBER, OR WRITE DIRECT.

MAID-O'-MIST INC.

3221 N. PULASKI RD.

CHICAGO 41, ILLINOIS

AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS



85% YEAR AFTER YEAR OF ALL NEW OIL BURNERS ARE EQUIPPED WITH...

Dielectric IGNITION ELECTRODES

For many years DIELECTRIC ignition assemblies have been the overwhelming choice for new burners or as replacements. They're ahead for 5 big reasons:

BETTER SERVICE ON NEW DESIGNS • QUICK DELIVERY OF STANDARD PARTS
AUTOMATIC PRECISION PRODUCTION • HUNDREDS OF STYLES • LOW PRICES

DIELECTRIC electrodes are the finest available in standard types and in special sizes and shapes, all UNDERWRITERS' approved.

DIELECTRIC also makes high tension cable assemblies and bus bars for transformer and electrode layouts for any burner hookup.

Go DIELECTRIC and you'll never again settle for lesser quality or service.

DIELECTRIC
PRODUCTS CO., Inc., 125 Virginia Ave., Jersey City 5, N.J.

percentage of relative humidity, the dehumidifier will automatically shut off. When used with humidifier the reverse is true. The humidifier is turned on at low humidities by the control and is shut off when the desired humidity is reached.

To install the control in conjunction with existing humidifiers or dehumidifiers, all that is necessary is to plug the unit into the control and plug the control into the nearest 100-volt wall outlet. The control will handle almost all modern types of electric humidifiers and dehumidifiers.

Made by: Abbeon Supply Co., 179-15 Jamaica Ave., Jamaica, N. Y.

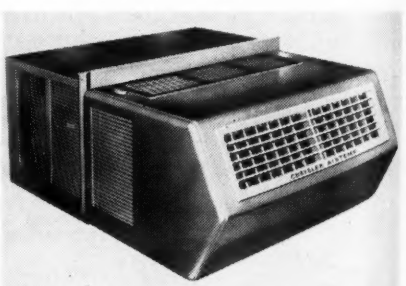
Leak Detector uses blacklight Principle to find liquid Leaks

RAYMASTER MODEL TF S4-B90 new blacklight leak detector furnishes a new and effective method for finding liquid leaks in vessels of all kinds. Utilizing the phenomenon of fluorescence, the lamp is simple in operation and requires less power than mercury lamps used as a source of blacklight. A very dilute solution of an effective fluorescing agent is dissolved in the liquid held by the tank. Under the rays of the exploring lamp any slight leak is immediately signaled by a bright glow. This reduces shutoff time in plants where leaks occur and are hard to detect. Fluorescing agents type GPC water soluble and type 5GA oil soluble, are available for use with the lamp which is battery operated.

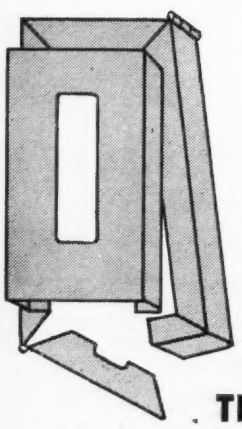
Made by: George W. Gates & Co., Inc., Hempstead Turnpike & Lucille Ave., Franklin Square, N. Y.

Airtemp announces new window Airconditioner

AIRTEMP recently announced two new model window-type airconditioners powered by ¾ and one hp motors. New this year is a four-way adjustable fresh air discharge. Horizontal and vertical louvers direct the air flow up or down or to either side.



Both models have the same dimensions—27½" wide, 15⅜" high. A



Stop Nuisance Service Calls with Tamper-Proof Thermoloks!

Thermolok Announces

an addition to its growing line of thermostat locking devices, a new combination thermostat lock and guard

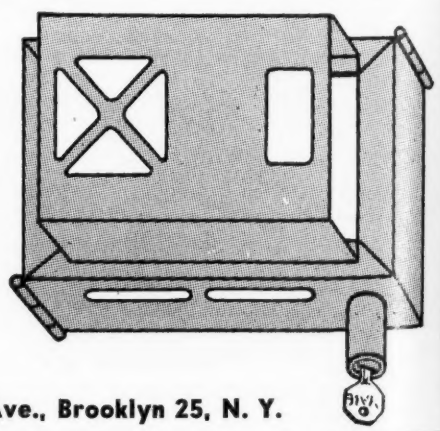
FOR INDUSTRIAL USE

Same Simplicity in Design:

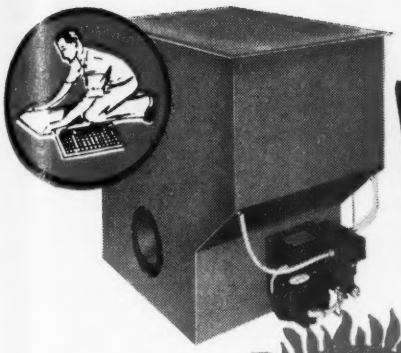
- No holes in walls
- No heat lock
- No nails or screws
- 15 seconds to install

FOR ROUGH USAGE

Can be used in schools, recreation centers, factories, etc. Models to fit M11, M147, T42 and TA42A now available. **Order from your jobber.**



THERMOLOK MFG. CO. INC., 541 Rogers Ave., Brooklyn 25, N. Y.



82,800 B.T.U. in Kleer-Kleen's Popular New *Easy Access* FURNACE

- MODEL E-283-SG is the ideal furnace for homes requiring higher - than - average heat output. Designed especially for homes without basements. Readily accessible from floor level. Efficient, compact, economical. Provides adequate forced air circulation at minimum cost.
- New Kleer-Kleen Electric Ignition burner makes all Kleer-Kleen furnaces completely automatic in operation. Also available with pilot-type burner.

LISTED AND LABELED BY UNDERWRITER'S LABORATORIES, INC. ALSO BEARS COMMERCIAL STANDARDS LABEL.*

*The Commercial Standards Label is the mark of superior efficiency developed in cooperation with the U. S. Department of Commerce. It is your assurance of greater safety, durability, dependability and performance. All Kleer-Kleen furnaces EXCEED the Commercial Standards requirements.

16 MODELS to choose from. For every home and every budget. up to 100,000 BTU

Just Set it... and Forget it! KLEER-KLEEN ELECTRIC IGNITION Does the Rest!

Distributorships Available in Some Areas

KLEER-KLEEN MANUFACTURING CO. OAKLAND, CALIFORNIA
America's Finest Furnaces

supporting cradle and window sealing materials are supplied. A three-position control selects either of the ventilating or ventilating and cooling stages. In addition to ventilating and purifying a mixture of inside-outside air, the unit removes excess moisture from humid summer air and discharges it outdoors.

The sealed compressor operates at 1,750 r.p.m. Condenser and evaporator units are constructed of copper tubing and aluminum fins for quick, efficient cooling.

Moving parts within the unit float on rubber mountings for vibration-free operation. A heavy layer of insulating material inside the cabinet assures quiet performance. Optional accessories are thermostat and wide windowseal kit.

Made by: Chrysler Airtemp Corp., Leo Street, Dayton 1, Ohio.

HPL cup Expanders designed to eliminate cylinder Leakage

A NEW LINE OF CUP EXPANDERS, ES-11, has been developed by the HPL Mfg. Co. to eliminate leakage in hydraulic and pneumatic cylinders. The expanders insure positive sealing action of cup packings by exerting controlled pressure on the packing lip so that it maintains constant contact with the cylinder wall. They are available in sizes for use with all standard hydraulic and pneumatic packing diameters from 1¼" to 2⅞".

Made by: HPL Mfg. Co., Cleveland 28, O.

Perfection designs new oilfired space Heater

MODEL H-818 oil space heater is the newest addition to the Perfection Stove heating line. It is a deluxe, low-boy model finished in mahogany blend, highlighted by a lustrous gold furniture trim. Equipped with the "midget pilot" which burns more than 40 hours on a single gallon of oil, it has a capacity of 63,000 Btu per hour. With its "multi-heat" burner it is furnished with a ten year written guarantee. Additional heating efficiency is made possible by extra-large reflector doors at the side. An oval combustion chamber retards the flow of heat up the chimney.

Made by: Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio.

McCORKLE CONTROLS *are designed to* GIVE—*not require* SERVICE

for Vaporizing Oil Burners

Less service means greater customer satisfaction—increased profits—more new business

- Patented dual blade bi-metal assembly —insures trouble-free operation—supplies a wide margin of extra power.
- More rapid heat transmission.
- Adjustable snap acting Micro-switch.
- Heavier, more rugged construction.

D. H. McCORKLE CO.
Box E, Station A Berkeley, California

Readers' Problems

(*Begins on page 110*)

20% of the fuel used on certain installations. But it would save hardly any fuel on the exceptional job that's modern in every respect, has excellent chimney draft at all times, and has an excellent system for controlling the over-fire draft.

Q. Can you give us the recommended chimney diameter and height for firing 6.00 gph at 12,000 ft. elevation?

K. F. G., Chicago

A. This thumb rule works out well, according to a certain consultant who has used it for years:

For each 1,000 ft. elevation above sea level, increase the height of the chimney by 8%, and deduct 4% from the capacity.

This applies, of course, to the table you ordinarily use to select chimney dimensions for sea-level installations.

Suppose that for a steam boiler having a gross rating of 3,000 sq. ft. you ordinarily (sea-level basis) would use a chimney 18" in diameter and 50 ft. high from the smokepipe connection to the top. The 18" diameter about equals a nominal 20" x 20" fire clay lining, which is 17¼" x 17¼" inside.

For 12,000 ft. elevation, add 8% to the height of this chimney for each 1,000 ft. elevation involved. Thus add 96%. The height becomes 96 ft.

Deducting 4% from the capacity for each 1,000 ft. elevation brings down the capacity 48%, making it 1,560 sq. ft. of steam, gross boiler output basis.

For a 1,560 sq. ft. steam boiler, gross basis, you thus need a chimney 96 ft. high and 18" in inside diameter—or approximately 17¼" x 17¼" inside.

This is on the basis of providing ample draft for hand-fired coal, a basis used by many engineers in selecting chimneys for oil-fired boilers. It serves well for oil-fired boilers having great draft-drop, which in the range of about 4.0 gph would need smoke outlet draft of about .15" or more.

Now if you can depend on the oil-fired boiler's needing far less draft than a hand-fired coal boiler of the same size, this stack 18" in diameter and 96 ft. high will serve nicely for your 6.0 gph firing rate. You will have to make up your mind concerning that. You should know if the particular boiler needs only slight smoke outlet draft because the oilburner has a blower and thus provides forced draft, or if the particular boiler is the high draft-drop type and so should be connected to a chimney sized on the basis of hand-fired coal.

Here are the figures on the basis of a high draft-drop oil-fired boiler. A steam boiler having a gross rating of 5,000 sq. ft. might need a chimney with actual inside dimensions of 20" x 24", and with a height of 55 ft.

For the 12,000 ft. elevation, add 96%, making the height 108 ft. Deduct 48% from the capacity as before, and the chimney is suitable for a 2,600 sq. ft. boiler, gross basis. This 2,600 sq. ft., gross basis, corresponds roughly to the 6.0 gph firing rate you mention. Thus at 6.0 gph and 12,000 ft. elevation, you need a chimney 108 ft. high and 20" x 24" actual inside dimensions—if the boiler is a high draft-drop type and should be connected, although it is oil-fired, to the same size chimney as for coal-firing.

KENT

Double Suction FURNACE CLEANER

You can't make profits without performance—and that's where KENT shines! Two fans mean high vacuum, high air movement . . . low RPM of motor means long life. No outside dustbag, no dust passes through fans . . . low center of gravity, less chance of tipping. Convince yourself: it pays to buy a good tool!

Don't decide till you see the KENT!

Carries easily — base weighs only 39 pounds, dirt can only 24 pounds!

Full information upon request

CLEAN WITH KENT EQUIPMENT

The KENT Company, Inc. • 434 Canal St. • Rome, N. Y.

Auto-flo "100"

AUTOMATIC HUMIDIFIER

★ NO FLOAT
★ NO DRIP
★ NO CLOG

EASIER to INSTALL

Eliminate Humidifier Service Calls

The revolutionary new Auto-Flo "100" Humidifier requires no servicing other than an occasional cleaning of the pan and the yearly replacement of the plates. A large size orifice replaces the float valve and there are no parts to stick, wear or clog up. Evaporator plates are equipped with drain clips to eliminate any possibility of dripping.

THIS IS Auto-flo's Stainless Steel DRAIN CLIP that Prevents WATER DRIP

One Year Factory Guarantee on all parts

*Pat. pending

AUTO-FLO CORP.

13526 Fenkell Ave. Detroit 27, Mich.

By all means, consider a draft inducer for a job like this one!

Q. New Jersey Fire Chief in a certain town refuses to approve installation of high-pressure atomizing oilburners in new homes having pre-fab chimneys, but does approve other types oilburners. Is there any precedent for this? Or any sense in it?

R. L. C., Passaic, N. J.

A. Many yarns that indicate the idiosyncrasies of local overbearing officials come to us, but this tops them all. Seven types of automatic oilburners are used widely. Firing the same furnace or boiler at the same gph rate, most will give identical stack temperatures. If the pre-fab chimneys are suitable for the six types of automatic oilburners not ruled out by this Fire Chief, then he has no leg to stand on in deciding personally that the seventh type burner (pressure atomizing type) should not be used with these chimneys because of increased fire hazard. From what you tell us, the Fire Chief is discriminating against the most widely used type of domestic oilburner. Such an action is appallingly unfair. We doubt that the town involved actually gives the Fire Chief the authority to judge for himself the relative safety of different types of oilburners —and to make related rulings that oilburner installers must obey. For the town to do this would be strictly comparable to permitting its Police Chief to act legally on his opinion that all automobiles are safe except those having six cylinders. We have heard of laymen who were scared by the words "high pressure" in the term "high pressure oilburner." But that was about 30 years ago! Knowledge of burners eliminated that!

Q. Three years ago I replaced an old-type boiler. Oversize, for 20 years it had been oil-fired very efficiently.

Near the end of the second season my new boiler-burner unit started pulsating and vibrating. I blamed poor draft caused by dirty flues and stack, tried to put things off until the end of the season. Job got worse and worse. Intermittently, for half-minute periods, boiler vibrated violently. Peep door clattered and smokepipe rumbled wildly. New boiler uses 8" smokepipe; old boiler had 10" size; smokepipe is 8' long.

Before start-up this season, I thoroughly cleaned the boiler flues, smokepipe, and chimney—to end the trouble. But then the vibration was worse, not better. Thinking I must have left something in the stack, I tore down everything again. No improvement. Things got worse and worse until the vibration and pulsation became continuous. Only way unit could be operated was with draft control flapper tight shut.

I removed nozzle unit, cleaned it and rubbed a bit of carbon from air deflector head. That ended the trouble.

Four months later, pulsation and vibration returned. This time, cleaning the nozzle assembly etc. doesn't help. During one "on" period, violent pulsation starts about three times, lasts about three seconds each time. Cleaning flues helps but little.

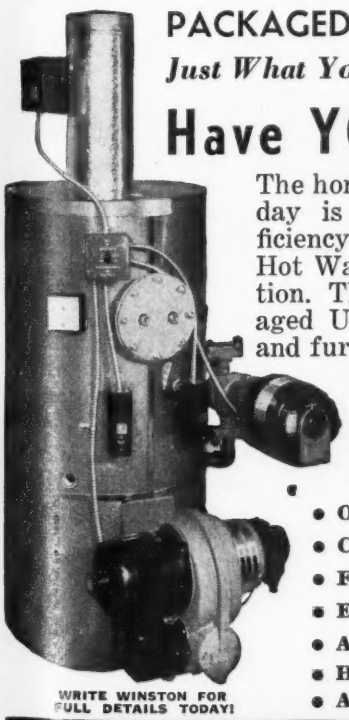
Desperate, I have tried various nozzle pressures, air supply adjustments, and draft adjustments. Now the job has 1 to 2 draft over-fire, 2 to 4 at boiler

MASTERFLAME

PACKAGED OIL-FIRED UNIT

Just What Your Customers Need!

Have YOU Got It?



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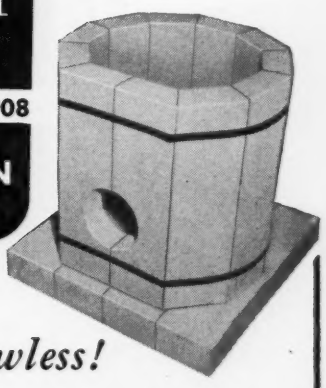

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smoke outlet, and 8 to 10 between draft regulator and chimney. The only things that have changed since I installed the new oil-boiler are: (1) upward bulge in bottom of firebox, and (2) bulge in one side of firebox. What causes this pulsation?

T. P. A., High Bridge, N. J.

A. This installation plainly is always on the verge of pulsating, even when for the moment you have gotten it free of pulsation. At the slightest excuse, it gives pulsation trouble. The excuse right now could be the out-of-shape combustion chamber. A new firebox might give performance as good as obtained when the boiler first was started. This would include the original tendency to pulsate at the slightest excuse.

As has been covered in feature articles we have published, the tendency of certain installations to pulsate usually relates to such things as: relatively small amount of combustion space in a boiler or furnace; high-speed flues or high draft-drop in flues; chimney characteristics; nozzle-spray characteristics; type of air-handling parts in the gun tube of the burner. If you operated this boiler with the smokepipe removed from it, there would be no flame pulsation. That brings out the importance of the chimney characteristics. Connected to a different chimney, the boiler might have no tendency to pulsate, although the different chimney and the now-used chimney both can give excellent, high draft.

You may have to replace the combustion chamber because it is out-of-shape. The following steps are used by good, practical service experts to rid installations of this type of flame pulsation:

1. Replace the air-handling parts now in the gun tube of the burner with entirely-different air-handling parts of design noted for producing lazy flames, free from tendencies to pulsate. This might inevitably reduce the maximum CO_2 reading obtainable with clean burning, thus the efficiency.

2. Work on the thing listed above which relates to flame pulsation, and which is the easiest factor to change; that is the nozzle-spray characteristic. Try different types and different makes of nozzles, including hollow-cone spray type and full-cone spray type, and including different spray angles. Extremely bad pulsation was ended on one installation after the owner had endured it for four years—by a determined serviceman who spent three hours trying out more than one dozen nozzles in the burner. The serviceman provided a 100% satisfactory, permanent cure. But when this job needs a new nozzle, it must have the identical make and model this serviceman learned rids it of all pulsation trouble.

3. If feasible for this job, use a firing rate considerably lower than you've used up to now. Lighter firing helps tremendously. To avoid such pulsation trouble as you face, certain dealers install oversize furnaces and boilers; if they know 1.0 gph is needed to heat a house, they install a furnace or boiler rated by its manufacturer for 1.35 or 1.50 gph.

4. Provide a means for the firebox or combustion space to "breathe." Allow basement air to seep into the firebox or the space above the fire, through a 2½" pipe nipple loosely stuffed with

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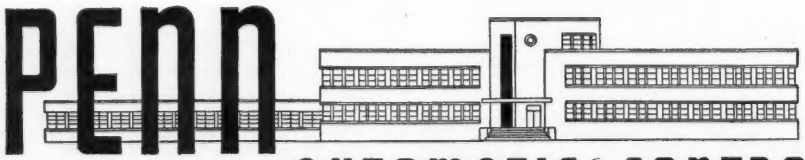
In thousands of installations . . . both warm air and hot water . . . heating men report that PENN Controls give *faster response, greater accuracy, more dependability* and are *easier to install.*

One of the reasons for this superiority on the job is PENN's patented, self-compensated diaphragm structure which eliminates the effect of ambient temperatures. Another reason is the liquid-filled power element which has greater sensitivity combined with dependable performance year after year. Then there is the compact, snap-acting contact structure totally enclosed to assure a dust-proof, tamper-proof, dependable switching mechanism.

And there are many other reasons which make PENN heating controls "tops" for any system with every kind of fuel. Try 'em on your next heating job . . . and you'll agree! Ask your burner manufacturer, wholesaler or write **Penn Controls, Inc., Goshen, Indiana.** Export Division: 13 E. 40th Street, New York 16, N. Y., U.S.A. In Canada: Penn Controls Limited, Toronto 13, Ontario.



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

rock wool or steel wool. Screw this pipe nipple into a hole you drill and tap for it in the firing door, or locate it next to or under the gun tube of the burner. The rock wool or steel wool serves to prevent the escape of soot and oil odors from the boiler during a cold start with little or no chimney draft.

5. Make certain the basement or utility room in which the boiler is located is obtaining ample outside air. Open an outside door or window to find out if this ends the pulsation.

6. Consider installing a draft inducer in the smokepipe to alter the characteristics of the chimney draft. For certain stubborn pulsation jobs, this has provided a perfect remedy.

Q. A 7 hp process-steam boiler is near its load in a factory, making suction and return lines 130 ft. long. Can the fuel unit trouble result from 3/8" oil lines? Burner is only two feet above top of tank. Fuel unit loses prime, for one thing, though suction line has no air leaks and two good check valves are in suction line. Owner wants 3/4" oil lines. I'm afraid to install these if there's a chance they won't end the trouble.

R. M. W., Dearborn, Mich.

A. Apply a vacuum gage to the fuel unit and ascertain the vacuum developed with the burner running normally. If the vacuum is unusually high, install the 3/4" lines to lower it. Many experts would want no higher than 10" vacuum on this job, and would say the suction line is too small if the vacuum is higher than 10". However, certain exceptional jobs run dependably although their fuel units develop vacuums as high as 15", and even 18".

Q. I've been reading your magazine for some years now and enjoy it very much. I would like to see an article on pumps, giving service pointers. Such as during summer check-ups at what point on the pressure gage and vacuum gage should a pump be replaced or taken in for repairs? Why is it sometimes possible to have a good vacuum and poor pressure or the other way around. What relationship has the vacuum to pressure? What relation has a leaking seal to vacuum? And to pressure?

In summer check-ups when I get a pressure reading of 150 or 160 tops, can this be all valve train trouble or does the pump suction come into the picture? How can you pin the trouble down to one or the other? Yours for a quick answer.

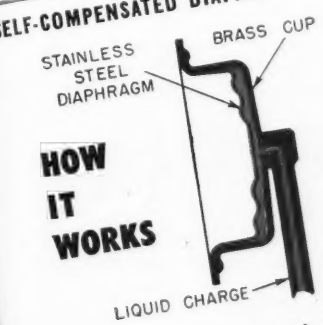
A Friend, West Warwick, R. I.

A. We know that because your inquiry gives no name and address, you have been waiting to see this answer appear here. You should know we always scramble or alter the initials of inquirers whose letters are printed in this department. Because they receive answers by mail, most inquirers do not wait as long for their answers as you have waited.

Taking each of your questions in turn, here are answers as detailed as can be given you here.

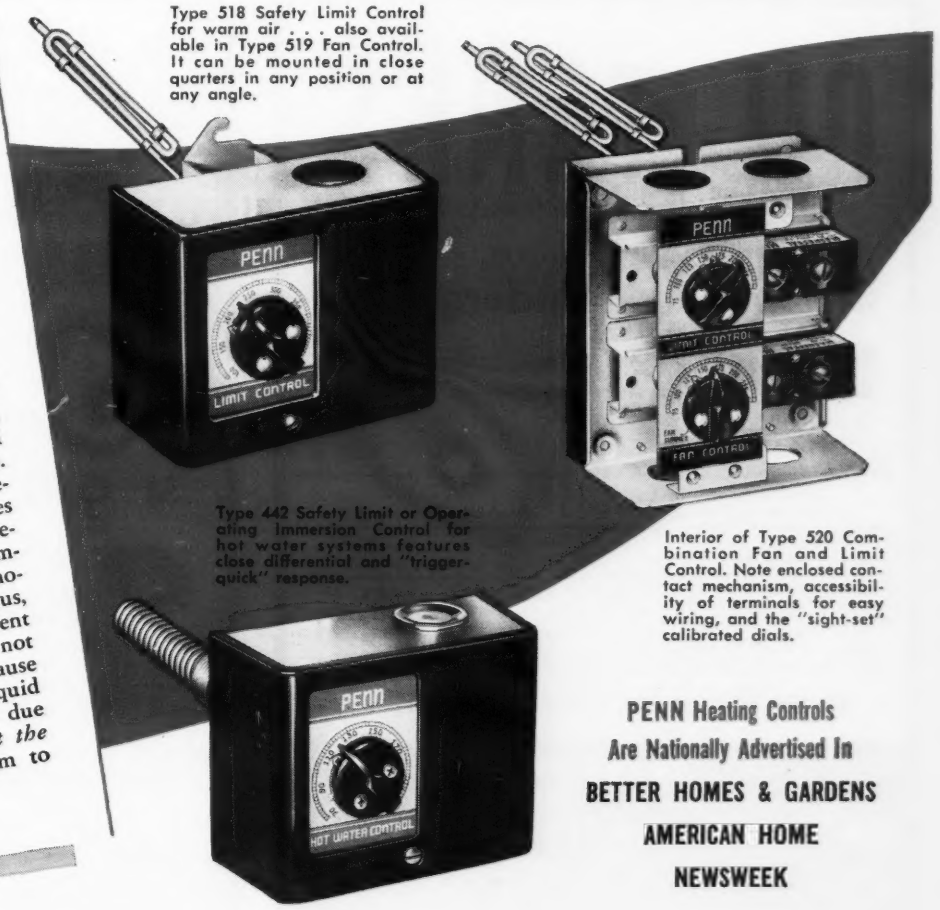
Most servicemen do not worry during a summer check-up about testing a fuel unit to find out if it needs replacement. To test a fuel unit for wear on a trouble job, always use a two-line

SELF-COMPENSATED DIAPHRAGM



HOW IT WORKS

The PENN patented, self-compensated diaphragm structure consists of a single diaphragm of low expansion stainless steel backed by a brass retaining cup. The difference in expansion between these two metals creates just enough additional space between them on a change in ambient temperature to accommodate the liquid expansion. Thus, this expansion (due to ambient temperature change) does not deflect the diaphragm to cause switch operation. *Only* liquid expansion (or contraction) due to temperature changes *at the bulb* can affect diaphragm to create switch operation.



Type 518 Safety Limit Control for warm air . . . also available in Type 519 Fan Control. It can be mounted in close quarters in any position or at any angle.

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Interior of Type 520 Combination Fan and Limit Control. Note enclosed contact mechanism, accessibility of terminals for easy wiring, and the "sight-set" calibrated dials.

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set-up—use a return line. On an inside-tank job that has no return line, use a five-gallon can, run a temporary suction line and return line to the can, and of course set up the fuel unit for two-line operation. Air-rid the fuel unit thoroughly before you test for maximum vacuum. Closing tight a suction-line valve should produce a vacuum of at least 25"—that's the passing point for the vacuum-producing ability of a fuel unit. Excessive wear of the gears or gear case of a single-stage or single-pump fuel unit prevents development of a 25" vacuum. In a two-stage or double-pump fuel unit, excessive wear of the first pump (suction pump) prevents development of a 25" vacuum.

To test the pressure-developing and gph-to-nozzle ability of a fuel unit on a trouble job, make either of these tests or make both: 1. Find out if the fuel unit can provide steady, dependable pressure considerably higher than the 100 lbs. usually applied to a nozzle; without switching to another nozzle, find out if the pressure can be raised to about 130 or 150 lbs. 2. Just for test, try out a nozzle having an output much greater than the output of the nozzle usually used (perhaps 100% greater on small jobs fired lighter than 2.0 gph, down to 25% greater on largest jobs fired harder than 20 gph). Don't light up where this would result in smoke and soot; direct the nozzle spray into a pail or can.

Fuel units have a by-pass slot or equivalent around their pressure regulating valves which you should know about; the effect of the by-pass slot enters the above tests, for while it provides certain air-ridding advantages for a fuel unit it also decreases the gph-to-nozzle ability of a fuel unit.

From what you say about top pressure readings of 150 and 160, we judge that what you have been doing in this connection is merely ascertaining the maximum pressure for which different fuel units can be adjusted. That tells nothing about the condition of fuel unit, as far as wear is concerned. That is to say, we believe you have been testing healthy fuel units in this way, and a unit that developed 160 lbs. pressure as maximum would have developed 200 lbs. pressure if you could have set its adjusting screw for higher pressure or if its pressure-regulating valve were fitted with a longer or stronger spring. To learn something at the risk of ruining a fuel unit, use a 250 lb. pressure gage and carefully close off the return line valve on a two-line set-up. You may see readings as high as 250 lbs. from typical fuel units. If you are daring, you can try for higher readings, realizing you may damage the fuel units.

We recommend that you obtain and study all the technical and educational literature available from all the manufacturers of oilburner fuel units. Doing that and making on-the-job tests of the kinds described here will answer fully all your questions.

Q. I have a problem which I hope you can solve for me.

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GULF
SOLAR HEAT

The oilburner unit in the basement has been giving trouble ever since it was installed.

The big trouble is back-draft.

Like all restaurants, of course this one has exhaust fans. First the interference from them was licked by closing up the section of the basement where the oilburner is located. We recommended a partition for this, and it was erected.

Next we had a chimney man increase the height of the stack about seven feet. Prior to this, we had to remove a piece of heavy sheetmetal, about 10 ft. long, with a whirling type cap on it. Reason for removal: Chimney got damp, and metal part of it never got dry.

We had tried this original chimney and it seemed to work OK for a few days. Then we got a call back because the back-draft had caused the fire to burn back in the gun tube of the oilburner; fire burned the ignition wires so they had to be replaced.

Then we made a transition piece and put a length of 8" galv. smokepipe on—equipped with a very special cap on top. Objective was to kill the back-draft.

This did a good job for about two weeks. Then we got another call. The ignition wires in the gun tube had burned up again. We took off the very special cap and had a regular flue-lined chimney installed on top of the original chimney to increase the height by about seven feet, as mentioned earlier. This worked OK for about one week, and now again they get the occasional back-draft.

So far our account has been very cooperative, but the bills have run up to about $400 and the trouble is not licked. Will you try to help us?

S. R. L., Rahway, N. J.

A. It is difficult to imagine a back-draft so forceful as to cause the products of combustion to flow backwards through the gun tube with the burner running and the gun-tube gases bucking the action of the blower in the burner. Yet you say you "got a call-back because the back-draft had caused the fire to burn back in the gun tube," burning the ignition wires so they had to be replaced. It is doubly difficult to imagine this happening after the highly effective steps you took to (a) eliminate the effects of the exhaust blowers on the oilburner, and (b) improve the chimney draft.

We believe, then, that you are barking up the wrong tree—have diagnosed the trouble incorrectly. We believe that you are having "burning-in" trouble caused by poor adjustment or poor design of the air-handling parts in the gun tube, and possibly poor positioning of the nozzle with respect to the air-handling parts at the end of the gun tube.

The development of back-draft (positive pressure in the smokepipe) can cause the flame to become smoky after you have adjusted for a clean-burning flame with the smokepipe draft properly negative. Back-draft can also cause products of combustion—including smoke, soot, and oil fumes—to escape from the air leaks and gas leaks ordinarily found in a typical furnace or boiler. But back-draft cannot cause the flame of a good, properly-adjusted burner to burn within the gun tube and burn the high-tension wires so they

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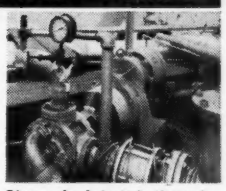
Product handling is reduced to a minimum at Shell Oil Company's Willbridge terminal near Portland, Oregon. Operating 24 hours a day, it uses eleven Viking heavy-duty pumps for blending the different oils needed to meet the season's demands.



Steam is injected through copper tubing to heat oil in pump and line.

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Heavy-duty, 200 GPM Viking Pumps shown at right, are direct connected to geared motors and used in this petroleum handling operation.

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must be replaced. Something other than back-draft is causing that trouble on this installation!

Either replace the air-handling parts in the gun tube of this burner, or try entirely different adjustments for them. In other words, take highly effective steps to guard against "burning-in" trouble. Don't leave the burner "nervous" and on the verge of "burning-in"—and in a condition to start "burning-in" if the slightest thing goes wrong. Wrongly adjusted to be on the verge of "burning-in," a burner can snap into "burning-in" trouble for any of a number of reasons, including of course a drop in its over-fire draft.

To avoid any chance of the flame's whipping into the end of the gun tube and giving "burning-in" trouble, certain burners need smaller-diameter air-openings at the ends of their gun tubes when fired at gph rates much lower than the maximum for the burners. The idea is to speed up the flow of air out of the gun tubes and around the nozzles.

Make certain also that there are no oil leaks in the gun tube. Slight leaking or dripping is a commonly-encountered reason for fires in gun tubes. A leaky shut-off valve can cause similar trouble. We suggest you play safe and equip the burner with a nozzle-line solenoid valve.

You'd better become familiar with draft inducer equipment, as on this job the draft troubles could have been handled more simply, inexpensively, and positively by switching at once to motorized draft. Write to these two companies for complete information on

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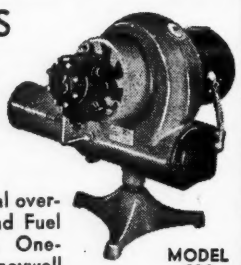

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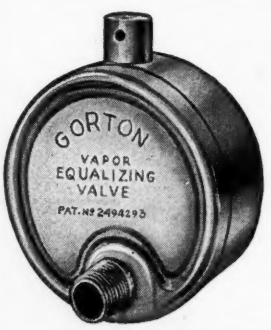

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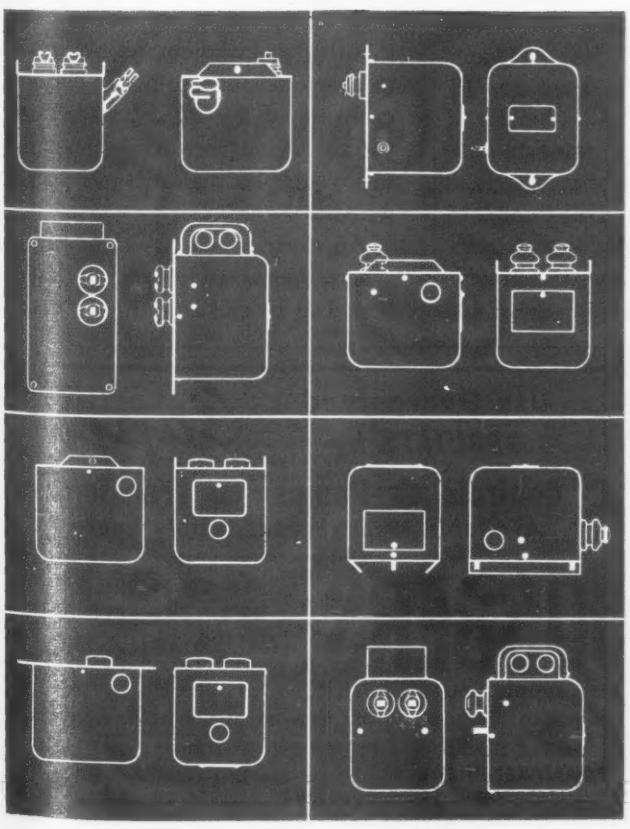

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If you're a service man, out to build a reputation, order HYDROVALVE electrodes next time you're at your jobbers.

You can depend upon HYDROVALVE quality because HYDROVALVE electrodes are used as original equipment by leading oil burner manufacturers.

Q. I have a very baffling problem and would like your help or suggestions.

I have had three complaints, each saying when the oilburner starts it frequently burns out light bulbs that happen to be turned on, and also sparks frequently jump from base plugs in the rooms.

Two burners involved are the same make. The third is a different make. Two are five years old. The third is 15 years old. Two are in the city, while one is in a rural area. Aside from this annoying phenomenon, the burners run perfectly.

I asked help of the public utilities, but found no solution.

My theory is that in some way a surge of high frequency current flashes back into the line-voltage house circuits when the current to the ignition transformer is cut off. I say high frequency current because a spark jumps the gap between the slots of base plugs in the rooms. Do you know if it is possible for an ignition transformer to produce such a back surge of current when the current to its primary is stopped, as when the ignition is cut off? The last complaint said that the lights burned out or the sparks jumped in the rooms about one minute after the oilburner started. This burner has intermittent ignition. Your opinion will be greatly appreciated.

R. S. C., Kankakee, Ill.

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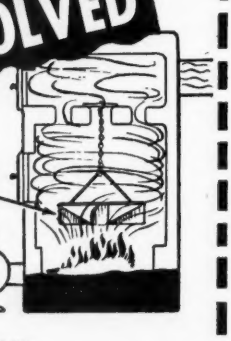
Don't fail to use combustion testing instruments in handling combustion troubles of the type faced on this job. Make certain to use a CO_2 analyzer, a draft gage, and a stack thermometer. Many experts say it is necessary or helpful to use a smoke checking instrument in addition.

A. The problem of transient current, which you describe accurately, is not new. Burner experts discussed it 15 years ago. The wonder is that, since certain installations give this trouble although there is nothing exceptional about the installations, the trouble is not encountered more frequently. Certain burner men believe the trouble occurs on perhaps one job out of one thousand or five thousand, and on the trouble job occurs during one oilburner cycle out of five hundred. Certainly, you are having more than your share of this trouble on the three jobs you describe.

An electrical engineer reports that after extensive study he found that the best way to end this trouble was to

YOUR BAFFLING PROBLEM SOLVED



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Sundstrand OIL BURNERS

Enthusiastic reception by the public explains the higher sales frequency of the Sundstrand all-electric oil burners. With a Sundstrand, the most modern concepts of warm air heating are realized. . . . That's not enough; with a Sundstrand, initial low-cost is matched by long-span oil burner performance.

. . . These values and the Sundstrand reputation for the finest in oil heating add up to complete customer satisfaction. Foot or bracket mounted, all Sundstrand oil burners are listed as standard by Underwriters' Laboratories . . . and meet all state and local requirements.

A leader in oil heating for 33 years.

SUNDSTRAND ENGINEERING CO., Rockford, Illinois

connect a suitable resistor, amounting to about a 50-watt load, in parallel with the primary of the ignition transformer. Becoming only slightly warm usually, a suitable radio-type resistor would drain off the transient current without burning out, as would a light bulb in the same location. An effective and nearby ground would be needed for the neutral wire of the line-voltage circuit, the oilburner chassis, and the case of the ignition transformer.

However, you probably do not want to make a project out of altering or adding to the three troublesome oilburners to end this difficulty, therefore we suggest you take these simple steps which probably will do the trick. First, ground the burner chassis (and along with it the case of the ignition transformer, of course) by running a wire from it to a nearby water line. Make certain the water line provides an excellent ground. Second, make certain that within the house the neutral side of the house-wiring system has an excellent ground. Third, keep down the electrical potential of the secondary circuit of the ignition transformer on the burner by setting the spark points as close together as is practical. Try to use a spark gap of only an eighth of an inch. The trouble on the three jobs could relate to your adjusting the burners for unusually long ignition sparks.

Certain service experts have ended trouble of this kind by switching the trouble jobs to another make ignition transformer. Others have switched to a different make safety control panel, on the basis of turning to an ignition cut-off switch having different electrical characteristics. Still others have ended the trouble by either adding or eliminating radio-interference traps or condensers, wired to the primaries of ignition transformer.

You should write for information to the manufacturer of the ignition transformers on the trouble jobs, for this might obtain for you information matched to the characteristics of the particular ignition transformers.

This transient current difficulty undoubtedly exists in many homes to the mild degree of causing light bulbs to burn out occasionally, and in these cases the home owners are condemning not the oilburners, but the manufacturers of the light bulbs. Thus you are trying to pinpoint a solution to a problem which can be overlooked by most burner dealers.

Q. I have read your Readers' Problems column in FUELOIL & OIL HEAT for many years. It has been informative and interesting.

In the October issue you make the statement without explanation, "Re-

AN OUNCE OF PREVENTION

is worth a POUND of CURE

This old adage was never more true than in the case of leaking connections. You know what damage they can cause . . . what they cost to repair.

Rectorseal #2 is the ounce of prevention you need to prevent such leaks. Thin in the can for quick, economical, easy application, Rectorseal #2 thickens in the joint to a plastic elasticity that maintains a perfect seal for the life of the connection. It has been proved by more than 15 years use by the oil industry. SEND FOR FREE SAMPLE. Prove to yourself that Rectorseal #2 is the finest sealing compound you ever used.

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Designed to replace the Webster Fuel Unit inlet bushing, the new Web-chek is *essential for holding the prime* on Suspended Furnaces and Hi-boys.

- eliminates many unexplained "on safety" service calls
- used on both single and double stage fuel units
- easily installed in shop or field without pump disassembly, gaskets or pipe dope required

For use on all one and two pipe jobs. See your jobber or write direct.

Specify size: ¼" or ⅜".

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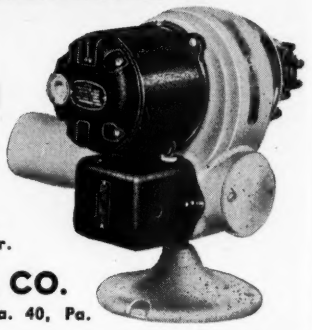
VALVES • CONTROL REPAIR PARTS • SPECIALTIES

EVEN-HEET

Every burner tested in conformance with Commercial Standard CS-75 requirements—and bears this label.



Made by Philadelphia's largest domestic oil burner manufacturer.

A. GREENE MFG. CO.
3409-15 N. Hutchinson St., Phila. 40, Pa.

placing ordinary combustion chambers by the best chambers . . ." etc. Please explain what you consider ordinary and what is best. I believe most installers use chambers of size and specifications dictated by burner manufacturers. I have used insulating brick, which today can be considered ordinary since it is used widely. Anything better suggested? The tone of your statement leaves doubt.

How do the results of gray-clay cast combustion chambers compare with the results of same-size, same-design chambers made of insulating brick?

P. J. G., Jr., Milwaukee

A. The complete statement in the October issue was: "The oil bills of many mediocre installations can be cut 25% to 50% by replacing their ordinary combustion chambers by the best combustion chambers it is possible to design and build, giving detailed attention to nozzles and air-handling parts, baffling effectively the combustion spaces or flue passages of the furnaces or boilers, and winding up with the type of combustion test readings mentioned above."

Earlier there was mention of good results corresponding to a #3 smoke reading and 9% to 11% CO_2, and excellent results jibing with a #2 smoke reading and CO_2 higher than 11½%.

Thus we indicated that *mediocre* installations often have ordinary combustion chambers. That is true, particularly in the Bronx, N. Y., where S. F. A., who asked the question, services oilburners. There (and in several other parts of the country, notably Brooklyn) we find thousands upon thousands of burners which were installed by plumbers and heating contractors who are 100% price-conscious and 0% quality-conscious when it comes to their selection of the oilburners, fireboxes, and other material used in their installations. These men would not, then, dream of using insulating firebrick for the combustion chambers of their installations! We know one contractor who tries to meet cut-price competition by offering a low-priced installation having the cheapest firebox obtainable, then trying to sell a quality installation, having a firebox made of insulating firebrick, at a price $35 higher. The same burner is offered. The big differences in the two jobs lie in (a) the firebox, and (b) combustion tests, and everything that goes with them to obtain good readings, for his higher-priced job.

From all this you can gather that we do not consider insulating firebrick as ordinary material for building fireboxes.

Because the matter is controversial and depends on the details of the installation involved, we cannot answer your final question regarding the relative merits of the two types of fireboxes. Easily made on-the-job tests can settle the question for you.

Q. For a domestic steam radiation load that needs a firing rate of 1.5 gph, I installed an oil-designed boiler that according to its manufacturer gives rated output when fired about 2.5 gph. Firing 1.5 gph, boiler carries load nicely and gives the low stack temperature (lower than 500°) I aimed for. Now a serviceman friend tells me he's been

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For the NEW HOMES-REMODELING Jobs

A complete package—Including Fin type heating elements—Front panels—Wall brackets—Inside and Outside corners—and splices. Packed in 8 ft. lengths.

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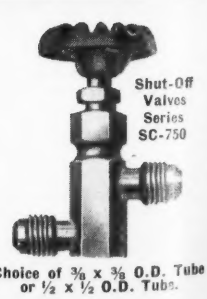
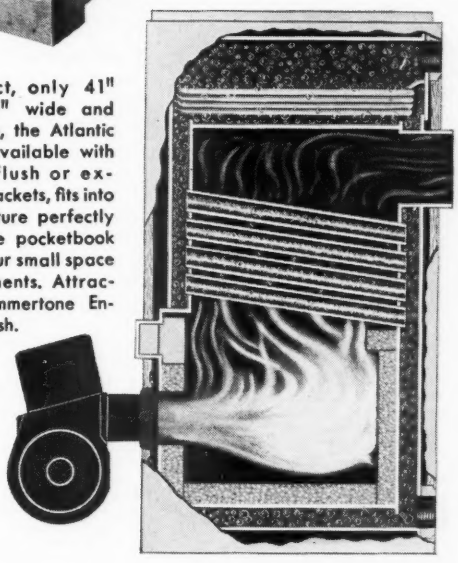


Choice of ⅜ x ⅜ O.D. Tube or ½ x ½ O.D. Tube.

as easy as that?

Certainly when it's an *Atlantic* "500"

Horizontal Water Tube Heating Package!



Compact, only 41" high—19" wide and 41" long, the Atlantic "500" available with either flush or extended jackets, fits into your picture perfectly —fits the pocketbook —fits your small space requirements. Attractive Hammertone Enamel finish.

Built in accordance with ASME boiler construction code. Wet base—fire box completely surrounded by water—horizontal tubes mean economy of operation—efficiency and quicker heat—boiler can be cleaned easily from either side.

What makes it so easy? Here's the answer. Atlantic made a study of the Heating Field and found out that installation costs were high, assembling took precious time. So—they came up with the obvious answer—

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completely assembled for quick installation. Its enthusiastic acceptance was immediate.

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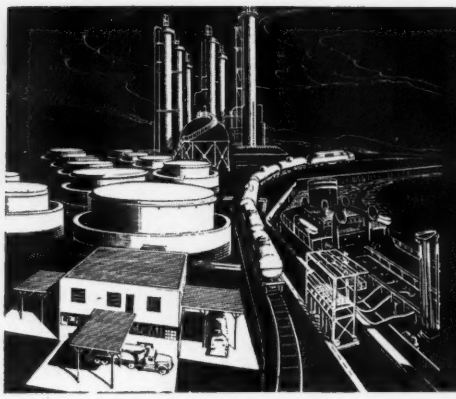

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taught by excellent authority "to always fire the boiler capacity, not the load" on a steam job. He says I should fire this boiler at 2.5 gph. Trying that, I got 680° stack, the very thing I engineered to avoid. Besides, I used clock on the burner with it firing 1.5 gph, learned that with outside temperature of 20° the burner runs a total of only nine hours on such a day. First, won't the stack loss be higher firing 2.5 gph instead of 1.5 gph? Second, won't the losses that result from firing intermittently be increased by using the higher firing rate? Third, isn't it silly to aim to have the burner run less than a total of nine hours on a 20° day? Fourth, ain't I saving oil on this job by firing 1.5 gph, not 2.5 gph?

T. V. S., Framingham, Mass.

A. As you are aware, different experts might answer your questions differently. We believe, however, that most experts would give emphatic "Yes" answers to each of your four questions. Under the job conditions you describe, few experts would give "No" answers.

Q. Looking over back issues of FUEL-OIL & OIL HEAT, *I see excellent articles for dealer education, for example: "Starting a New Burner" and "Installing the Domestic Oilburner."*

As sales manager for a burner manufacturer, I am flooded with requests for information on subjects covered by these articles. It would be nice if we could send dealers copies of these articles to help them solve their problems.

K. H., Paterson, N. J.

A. Thank you. In return for your compliments we are sending you a complimentary copy of our reprint book, "Installing the Domestic Oilburner." Consisting of 64 pages that include the very articles you name and similar articles, this should help your dealers. They can obtain it from us for one dollar. We are also sending you 24 copies of our leaflet, "Oilheating Books for Every Purpose," which lists about four dozen books helpful to oilburner men. You may want to send these leaflets to dealers who put sales or technical questions to you.

Long or short Cycles?

(*Begins on page* 84)

respect between these two boilers is not apparent, but it suggests the interesting possibility that once the subject is more thoroughly understood something can be done to offset, to a great extent if not completely, any adverse effect that short firing periods may have.

The authors do not have sufficient field data to indicate whether an increase in fuel consumption, which would be expected on the basis of the above laboratory data, would result in actual practice following a change from the usual mode of burner operation to one characterized by short and frequent firing periods.

It is well to remember that laboratory data do not tell the whole story, inasmuch as they relate only to the heat that reaches the radiators or convectors. It is estimated that about 20% of the heat liberated in a good oilburning installation is lost up the stack. If only 50% to 60% of the total heat reaches the radiators, as indicated by these data, then it can be assumed that

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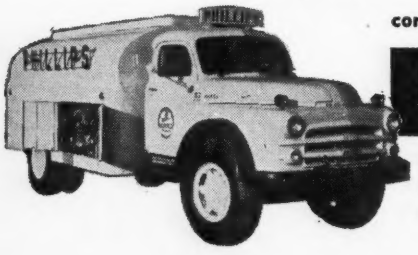

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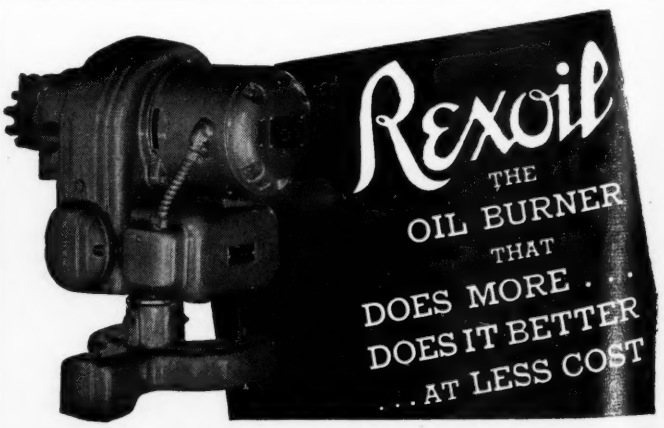

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no cutting or screws; panels to size
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one price includes corners,
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ends, joiners, hangers, etc.

More than
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some of the remaining 20% to 30%, which is unaccounted for, may find its way into the rooms above by devious routes, mainly via the basement and up through the floors. The actual amount of this heat which finally does reach the rooms to be heated, however, will depend largely on how much of it is lost en route. This in turn is dependent on such variables as constructional features of the house, air leaks into the basement, location of the boiler, etc. The distribution of this relatively large proportion of the heat (which is more or less independent of the efficiency of the boiler) may account for certain discrepancies which sometimes are observed between estimates of fuel requirements based on laboratory data and actual fuel consumption realized in practice.

It will be evident from the foregoing discussion that the work that has been done to date had been primarily of an exploratory nature. Much work remains to be done before a formula can be set up for selection of a steam heating plant and determination of the conditions under which it should be operated to give optimum performance at minimum cost. No study has been made in this laboratory of hot water and warm air systems. These, too, must be investigated to complete the picture and establish bases for selection and operation of all types of domestic heating systems. It is the authors' hope that other segments of the heating industry will continue the studies in order that the missing information may be supplied.

❖

Retreat from Hazards

(*Begins on page* 80)

Among the many fascinating products studied in a day's visit to the lab was one which sticks in the mind. It's a 25¢ slot machine oxygen inhaler. With a rubber shield over your mouth and nose you inhale the stuff for 10 minutes and it is said to sober up the worst drunk so that his wife will think he's coming straight from prayer meeting. Oxygen is highly explosive, so it may not get a label but anyway it's on the market in some spots.

You can't fully understand Underwriters without knowing Curt Welborn the present head of the layout. Because he's a professional man working with hundreds of other professional men there is no atmosphere of boss-and-workmen. Rather it's a team, all working the same side of the street, to the end that all of us can live safer than we have realized, and insurance rates can be held down to where we can afford them.

❖

New Catalog covers Muelleraire Ducts

A NEW CATALOG on Muelleraire furnace pipe, duct and fittings has been published by L. J. Mueller Furnace Co., Milwaukee, Wis. The catalog contains details of all types of Muelleraire products, including gravity, graduated trunk and extended plenum systems, small pipe and perimeter systems.

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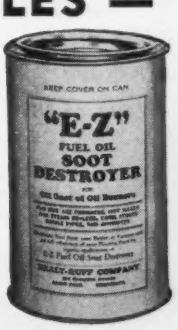

(*For fuel oil soot only.*) Many heating plants are now loaded with soot that wastes fuel and costs money. Sell cleaning jobs. Use *E-Z*. One application does a thorough soot cleaning job. There's good extra profit in it. If your distributor cannot supply you, order direct.

No. 1 Pkg. approx. 1 lb. .....List $1.00
No. 5 Pkg. approx. 5 lbs. ....List $4.50

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HEALY-RUFF COMPANY
797 HAMPDEN AVE. ST. PAUL 4, MINN.

Oilheating Trends

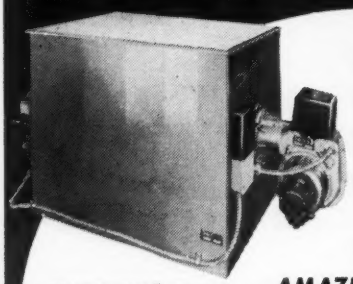
(*Begins on page 14*)

last year. This is better than 29% up and, for the East Coast alone, the gain registered in primary stocks of fueloil was almost 60%.

DEALER COMMENTS: The dealers were asked this month to comment on "How do you think the removal of price controls will affect oilburners, burner service and fueloil prices?" Of all dealers who replied 27% stated flatly that price controls removal would have "No effect." The others displayed varied reactions, the consensus being that in the long run supply and demand largely would control selling prices, but that for the immediate future a rise in the price of burner service was likely, but by no means inevitable. Some typical remarks: Competition is our worry, not price controls. Should be a good year with plenty of competition . . . Let the old principle of supply and demand rule. Now let's see who can make the better mouse trap. May the best manufacturer win! . . . Prices will go up . . . I think it will raise prices, but they'll turn around and come down . . . The effect of this can slow down the industry with the result showing two to three years from now . . . Burner and burner service prices will go up, fueloil down . . . Removal could remove the floor. Price controls have tended to hold a weak structure up! . . . No change in oil prices or equipment. Service rates should go up as there has been no change here in 12 years . . . Prices surely won't go up, may drop . . . No price advance on oilburners or heating systems, slight increase in service charges and (we hope) slight increase in fueloil prices . . . Fueloil price may go up; rest will stay the same . . . There already has been an increase in both retail and wholesale fueloil prices in this area . . . Burner service prices may go up 10% . . . Oil prices already have gone up . . . There should be slight increase in labor costs, parts remaining about the same . . . Weaker market already showing up here . . . Do not think burner or service prices will go up, but fueloil will probably have a slight increase . . . Burner service will be higher. In fact, we already have raised our prices from $4.50 to $5 an hour. Other prices should stiffen . . . Oilburner controls might cost more, along with motors and transformers . . . A general increase, except fueloil . . . Due to extremely mild winter, I believe a price decrease will ensue . . . Prices are due to increase . . . Fueloil should go up to give increased margins to dealers to cover increased costs. On oilburner prices, competition will force them lower . . . No effect at this time, then lower prices . . . Removal of controls is very bad at this time . . . Very little effect, unless manufacturers decide to increase prices. Competition should keep service and oil prices down . . . Charges for service policies definitely should be raised . . . There will be no effect on equipment. Our fueloil retail price must go up in this area. We get only a 2.7¢ spread which is grossly inadequate . . . Oil jobbers in this area have increased price of No. 1 oil. We do not anticipate any reduction in equipment sales.

New DELTA GUN-TYPE OIL-FIRED FLOOR FURNACE*

• with forced-air blower-fan . . .



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*Pat. Pending

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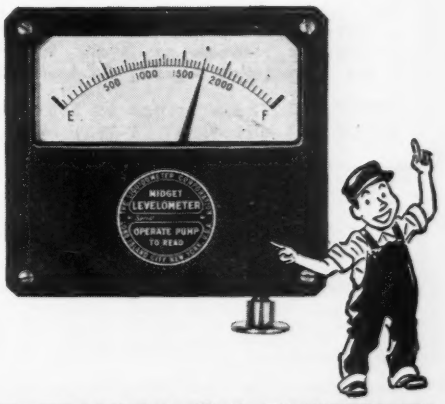
DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE			
	February		Percent		Sept. to February			Percent
Normal	1952	1953	Change*		Normal	1952	1953	Change*
1174	1094	1005	— 14.4	Albany	4862	4990	4620	— 5.0
568	459	485	— 14.6	Atlanta	2405	2108	2242	— 6.8
844	681	636	— 24.7	Baltimore	3413	2965	2826	— 17.2
1027	935	834	— 18.8	Boston	4215	3894	3690	— 12.5
1168	1036	956	— 18.2	Buffalo	4772	4641	4315	— 9.6
1085	904	924	— 14.8	Chicago	4539	4482	4191	— 7.7
905	728	707	— 21.9	Cincinnati	3806	3370	3252	— 14.6
1074	925	823	— 23.4	Cleveland	4389	4040	3696	— 15.8
445	308	406	— 8.8	Dallas	1985	1589	1898	— 4.4
900	812	851	— 5.5	Denver	4198	4096	3701	— 11.8
1143	942	985	— 13.8	Des Moines	4893	5188	4757	— 2.8
1141	1031	914	— 19.9	Detroit	4738	4599	4205	— 11.3
1150	1004	950	— 17.4	Grand Rapids	4855	4743	4388	— 9.6
1062	960	850	— 20.0	Hartford	4425	4255	3990	— 9.8
1155	1216	979	— 15.2	Helena	5566	6540	5115	— 8.1
253	176	252	— .4	Houston	1129	818	1350	+ 19.6
982	817	770	— 21.6	Indianapolis	4139	3877	3640	— 12.1
921	737	685	— 25.6	Kansas City	3881	3850	3519	— 9.3
232	182	180	— 22.4	Los Angeles	891	1004	847	— 4.9
824	699	661	— 19.8	Louisville	3432	3259	3141	— 8.5
1181	1043	1043	— 11.7	Milwaukee	5025	5278	4768	— 5.1
1379	1192	1313	— 4.8	Minneapolis	5981	6245	5704	— 4.6
251	166	222	— 11.6	New Orleans	1045	784	951	— 9.0
958	821	755	— 21.2	New York	3842	3395	3267	— 15.0
1098	886	921	— 16.1	Omaha	4695	5016	4626	— 1.5
881	752	693	— 21.3	Philadelphia	3542	3160	3069	— 13.4
971	809	752	— 22.6	Pittsburgh	4042	3586	3391	— 16.1
1184	1123	1041	— 12.1	Portland, Me.	5082	5178	4800	— 5.6
622	642	544	— 12.6	Portland, Ore.	3073	3140	2531	— 17.6
1032	915	801	— 22.4	Providence	4292	3779	3593	— 16.3
723	662	621	— 14.1	Roanoke, Va.	3165	3120	3013	— 4.8
865	701	653	— 24.5	St. Louis	3593	3472	3230	— 10.1
868	981	749	— 13.7	Salt Lake City	4176	4385	3452	— 17.3
340	365	300	— 11.8	San Francisco	1734	1893	1631	— 6.0
1478	1308	1270	— 14.1	Sault Ste. Marie	6284	6341	5758	— 8.4
644	602	576	— 10.6	Seattle	3221	3118	2630	— 18.4
1090	995	921	— 15.5	Toledo	4553	4548	4229	— 7.1
842	679	617	— 26.7	Washington	3496	2958	2911	— 16.7

*Compared with normal.

A GOOD GAUGE COMPLETES A GOOD INSTALLATION



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Robert Barclay INC. OIL BURNER SUPPLIES

THE NEWEST AID to the heating trade in years—the Barclay "Two-Tank-T" (pat. pending) oil filter. On 2-tank installations it reduces fittings required on cross-connection to only 4—also for 1-tank jobs. Uses standard, reliable Fulflo cartridge. Write for our bi-monthly catalog—the guide book for dealers since 1936. Robert Barclay, Inc., 130 N. Peoria St., Chicago 7, Ill.

ENGINEERS—EXTRA INCOME—You get the commission when you use our sludge-solvent in your fuel tanks or our soot-remover in your firebox. For particulars write Box 1006.

"K" FACTOR CALCULATOR. Handy, compact slide-rule. Eliminates cumbersome charts. Speedy. Accurate. Single setting gives both K-factor and degree day of usable oil. Only $5.50. Degree Day Systems, Dept. FO, 3930 58th Street, Woodside 77, N. Y.

MR. JOBBER—We rebuild controls exclusively for the wholesale supply house. No control obsolete with us. Write us for our price list on the more than 800 controls we rebuild. Agents & distributors wanted. Absco Control Rebuilders, Ozone Park 16, New York.

ATTENTION ALL SERVICE MEN—Do you suffer from "Weather-Man" grief? If you service the Weather-Man outside thermostat, you need the Weather-Chek. A new tool that gives you accurate readings of running time in seconds, instead of hours. More than pays for itself on the first job. Money back guarantee. Check or money order for $7.50 will put the Weather-Chek to work for you. We also ship C.O.D. For further information write Jacobs Bros., Germantown Ave. at York St., Philadelphia 33, Pa.

SALESMAN to join a hard hitting sales force. We require an above average type man to present our line of packaged chemical products to the hardware, heating and plumbing supply trades. If you feel you are the man we seek write a short but complete resume to FOH, 4-88 47th Ave., Long Island City 1, N. Y.

TURN YOUR SURPLUS INVENTORY of stoker, oil burner or gas controls into cash. Mail list and price to Box 885.

DECALS—Service, nameplate or truck lettering and trademark decals made to your order. Easy to apply, uniform, distinctive, economical for small or large needs. Write for catalog. Mathews Co., 827 S. Harvey, Oak Park, Ill.

WANTED—Dealers and Manufacturers Representatives to handle complete line of furnaces. This is one of the leading, old established manufacturers in the business. Preferred and protected territories open. Only qualified aggressive sales representatives wanted. Give full references and experience in reply. Address P. O. Box 5012, Cleveland 15, Ohio.

WANTED—Aggressive sales manager to take complete charge of sales department. A chance of a lifetime offered by one of the oldest established furnace manufacturers. Give full experience and references. Address reply to P. O. Box 5012, Cleveland 15, Ohio.

$400 MONTHLY ADDED TO YOUR INCOME! Are you a salesman calling directly upon oil burner dealers? If you are, here is a liberal commission opportunity to represent the patented Heat-Lock, Mix-Mor combustion head, and Therm-O-Glo, which should add at least the above amount to your income. Write in confidence to National Fuel Conservation Co., Inc., P. O. Box 750, White Plains, N. Y.

EXCEPTIONAL OPPORTUNITY—After 30 years in the oil burner field, we are planning on retiring, and we will sell to a responsible party, all of our equipment, which includes our metal patterns, jigs, fixtures, castings, etc., to set you up in the oil burner manufacturing business. This oil burner is a strictly high grade, C S 75 fuel oil burner using No. 2 fuel, a de-luxe job that has been on the market since 1946. This burner has a very superior performance record, low up-keep cost is flexible and clean burning on present day fuels. It is a high pressure, gun type burner, reliable, dependable and safe. All cast-iron and steel construction, no white metal, no junk, really a superior product. Truly a great opportunity for an oil dealer or distributor. Reply Box 1083.

MR. DEALER. Why sell ordinary draft controls when you can do the customer a favor by installing the Heat-Lock at greater profit to yourself? It holds heat in 3 times longer—is guaranteed 20 years. Ask about revolutionary one piece Mix-Mor combustion heat and wonderful Therm-O-Glo. National Fuel Conservation Co., Inc., P. O. Box 750, White Plains, N. Y.

GOOD NEWS FOR OIL BURNER SERVICE MEN—You can now eliminate high vacuum in clogged oil lines due to sludge and dirt by using the Oil Line Snake without replacing new lines. Tried and tested. Order now, Oil Line Snake with instructions $5.00. American Made Products Co., 28 Merchant St., Newark 5, N. J.

FUEL OIL PRICE BOOKS. Price range .085c to .19c in tenths. 112 pages of rate tables, each table showing 1 to 250 gallons in 1 gallon steps, with supplemental figures to 100's and 1000's. Contains almost 30,000 accurate figures. A must for every driver. $2.75 each, f.o.b. Also, service order slips, fuel oil order slips, daily report sheets. Literature on request. Open account to rated firms. Nation Wide Service, 2416—65th Street, Brooklyn 4, New York.

MANUFACTURER'S AGENT WANTED. Nationally known heating manufacturer has exceptional opening for live-wire manufacturer's agent in New England. A complete line of oil and gas fired warm air hot water and steam boiler units. Also baseboard heating for both warm air and hot water systems. Many accounts already established. Protected territory. A well-rounded advertising and sales promotion plan. Replies confidential. Box 1089.

SALESMAN WANTED for hard-hitting sales force with the heating industry covering New England states. All replies confidential. Box 1090.

CLOSEOUT WELL KNOWN OIL BURNER CONTROLS. 50 stack switch relays model 1110, 50 4A thermostats, in original sealed cartons. Sell all or part. Make offer, no reasonable offer refused. Magno, Box 11, Caldwell, N. J. Caldwell 6-5300.

YOUNG FUEL OIL EXECUTIVE with six years of experience in management of retail business seeks connection with established firm. Prepared to invest. Mass., Conn., or Westchester County, N. Y. desired. Box 1091.

SIDELINE REPRESENTATIVES to carry a complete line of fuel oil meter tickets for one of the nations largest manufacturers of business forms. In New England, N. Y., and N. J. territories. Comm. basis. Box 1092.

CHANGE EXTRA CONTROLS and accessories into extra cash. Write Box 1067 for fast action.

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BUYER'S GUIDE AND INDUSTRY DIRECTORY

SECTION OF APRIL 1953 ISSUE

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by

HEATING PUBLISHERS, INC.

2 West 45th Street, New York 36, N. Y.

MANUFACTURERS OF
Oilburners, Oilburner and Heating Accessories, Equipment and Supplies

(Part I. Listed by types of equipment)

Air Conditioning

Central Cooling Unit

Airtemp Div., Dayton, Ohio
Brunner Mfg. Co., Utica 1, N.Y.
Bryant Heater Div., Cleveland 9, Ohio
Carrier Corp., Syracuse, N.Y.
Excell Heating & Air Conditioning Co., Chicago 18, Ill.
Fridigaire Div., Dayton 1, Ohio
Henry Furnace Co., Medina, Ohio
Hupp Corp., Cleveland 2, Ohio
International Sales Co., San Francisco 24, Calif.
Jaden Mfg. Co., Inc., Hastings, Nebr.
Kauffman Air Conditioning Corp., St. Louis 8, Mo.
Kennard Corp., St. Louis 17, Mo.
Lipman Refrigeration Div., Beloit, Wisc.
McQuay, Inc., Minneapolis, Minn.
Marlo Coil Co., St. Louis 10, Mo.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
New York Blower Co., Chicago 16, Ill.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Refrigeration Appliances, Inc., Chicago 7, Ill.
Refrigeration Economics Co., Inc., Canton 2, Ohio
Schnacke, Inc., Evansville, Ind.
Servel, Inc., Evansville 20, Ind.
Skinner Heating & Ventilating Co., Inc., St. Louis 6, Mo.
Thatcher Furnace Co., Garwood, N.J.
Typhoon Air Conditioning Co., Inc., Brooklyn 15, N.Y.
Viking Air Conditioning Corp., Cleveland 2, Ohio
Western Blower Co., Seattle 4, Wash.
Sturtevant Div., Boston 36, Mass.

Combination Heating-Cooling Units

Air Conditioning Eng. Co., Cambridge, Mass.
Air-Eau-Heat, Inc., Portland, Ore.
Acme Industries, Inc., Jackson, Mich.
Airtemp Div., Dayton, Ohio
American Coils, Inc., Newark, N.J.
American Rad. & Std. Sanitary Corp., Pittsburgh 26, Pa.
Bryant Heater Div., Cleveland 9, Ohio
Carrier Corp., Syracuse, N.Y.
Coleman Co., Wichita, Kan.
Delta Heating Corp., Trenton, N.J.
Front Rank Furnace Co., St. Louis, Mo.
General Electric Co., Bloomfield, N.J.
Henry Furnace Co., Medina, Ohio
Iron Fireman Mfg. Co., Cleveland, Ohio
Lennox Furnace Co., Marshalltown, Iowa
Meyer Furnace Co., Peoria, Ill.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
Niagara Blower Co., New York, N. Y.
Northwest Heating, Inc., Portland, Ore.
Olsen Mfg. Co., The C.A., Elyria, Ohio
Perfection Stove Co., Cleveland 4, Ohio
Servel, Inc., Evansville 20, Ind.
Skinner Heating & Ventilating Co., St. Louis, Mo.
Syncromatic Corp., Watertown, Wisc.
Thatcher Furnace Co., Garwood, N.J.
Typhoon Air Conditioning Co., Inc., Brooklyn, N.Y.
U.S. Rad. Corp., Detroit 26, Mich.
Viking Mfg. Corp., Cleveland, Ohio
Waterman-Waterbury Co., Minneapolis, Minn.
Williams Division, Bloomington, Ill.
York Corp., York, Pa.
York-Shipley, York, Pa.
Young Radiator Co., Racine, Wisc.

Benches, Work

Fold-Away Type

Handi-Eqpt. Co., Racine, Wisc.

Boiler Accessories

Automatic door closer

Falz Mfg., St. Paul 4, Minn.
Leisur-Maid Mfg. Corp., Grand Rapids, Mich.

Fittings

Barco Mfg. Co., Barrington, Ill.
Bell & Gossett Co., Morton Grove, Ill.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Chase Brass & Copper Co., Waterbury 20, Conn.
Crane Co., Chicago 40, Ill.
Elmira Steel Co., Brooklyn, N. Y.
Grinnel Co., Inc., Providence 1, R. I.

Insulation

Armstrong Cork Co., Lancaster, Pa.
Eagle-Picher Co., The, Cincinnati 1, Ohio
Gem Clay Forming Co., The, Sebring, Ohio
Johns-Manville Corp., New York 16, N. Y.
Mexico Refractories Co., Mexico, Mo.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Refractory & Insulation Corp., Port Kennedy, Pa.
Sall Mountain Co., Chicago 3, Ill.
Zonolite Co., Chicago 3, Ill.

Jackets

Atlas Mfg. Co., St. Paul 14, Minn.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Crane Co., Chicago 40, Ill.
Elmira Steel Co., Brooklyn, N. Y.
Fitzgibbons Boiler Co., Inc., New York 17, N. Y.
General Machine Co., Inc., Emmaus, Pa.
Haydon Prods. Corp., Brooklyn 15, N. Y.
Mt. Hawley Mfg. Co., Peoria 4, Ill.
Republic Prods. Co., Philadelphia 36, Pa.
Valley Forge Metals Co., Lansdale, Pa.

Seam protectors

National Boiler Co., Dayton 2, Ohio

Trim

Crane Co., Chicago 40, Ill.
Fitzgibbons Boiler Co., Inc., New York 17, N. Y.
New York Air Valve Corp., Brooklyn, N. Y.

Water feeders

(See listings "Controls, water level & feeder")

Boiler-Burner Units

Hot water, atomizing vertical rotary

Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Clayton Mfg. Co., El Monte, Calif.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Marietta Metal Prods. Corp., Marietta, Pa.

Hot water, high pressure burner

Acme Heating Div., W. Hartford, Conn.
Airflame, Inc., Waukegan, Ill.
Airtemp Div., Dayton 1, Ohio
Alan Distributors, Inc., Worcester, Mass.
Aldrich Co., Wyoming, Ill.
Altherm, Inc., New York 21, N.Y.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Ames Iron Works, Inc., Oswego, N.Y.
Anchor Div., New Albany, Ind.
Anchor Stove & Range Co., New Albany, Ind.
Auburn Burner Co., Auburn, Ind.
Auto-Heat Corp., Middletown, Conn.
Bethlehem Fdry. & Machine Co., Bethlehem, Pa.
Bock Corp., Madison 4, Wisc.
Boiler Eng. & Supply Co., Inc., Phoenixville, Pa.
Brown Fintube Co., Elyria, Ohio
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Bryan Steam Corp., Peru, Ind.
Bryant Air Conditioning Corp., Philadelphia 23, Pa.
Burnham Corp., Irvington, N.Y.
Century Eng. Corp., Cedar Rapids, Iowa
Cleaver-Brooks Co., Milwaukee 12, Wisc.
Coal-O-Matic Co., Trucksville, Pa.
Columbia Boiler Co., Pottstown, Pa.
Crane Co., Chicago 40, Ill.
Crown Petroleum Corp., Hartford, Conn.
Cyclotherm Div., Oswego, N.Y.
Delco Appliance Div., Rochester, N.Y.
Delta Htg. Corp., Trenton 8, N.J.
DeSoto Oil Burner Co., York, Pa.
Dewey-Shephard Boiler Co., Indianapolis 2, Ind.
Diesel Oil Burner Corp. of New York, Jamaica 5, N.Y.

Eckhart Mfg. Co., Inc., Union, N.J.
Eclipse Fuel Eng. Co., Rockford, Ill.
Electric Furnace-Man., Inc., Emmaus, Pa.
Electrol Burner Mfg. Co., Inc., Rutherford, N.J.
Esso Standard Oil Co., New York 19, N.Y.
Farrar & Trefts, Inc., Buffalo 12, N.Y.
Fairchester Oil Co., Inc., Port Chester, N.Y.
Federal Boiler Co., Inc., Midland Park, N.J.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Fluid Heat Div., Baltimore 24, Md.
General Automatic Prods. Corp., Baltimore 13, Md.
General Htg. Prods. Co., Philadelphia, Pa.
General Machine Co., Inc., Emmaus, Pa.
General Oil Htg. Corp., W. New York, N.J.
Gerstein & Cooper Co., Boston, Mass.
Gibraltar Corp. of America, Inc., Brooklyn, N.Y.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Greene Mfg. Co., A., Philadelphia, Pa.
Hanson-Gates Mfg. Co., Inc., Reading, Mass.
Hapman-Dutton Co., Kalamazoo, Mich.
Hart Heat Div., Peoria, Ill.
Harvey-Whipple, Inc., Springfield, Mass.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Heil Co., The, Milwaukee 1, Wisc.
Herco Oil Burner Corp., Lancaster, Pa.
Hershey Machine & Fdry. Co., Manheim, Pa.
International Heater Co., Utica, N.Y.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Johnson Co., S.T., Oakland, Calif.
Kewanee-Ross Corp., Kewanee, Ill.
King Boiler & Furnace Co., Shade Gap, Pa.
Kohler Co., Kohler, Wisc.
LaSalle Oil Burner Co., Inc., Seattle 3, Wash.
Major Oil Burner Co., Philadelphia 22, Pa.
Manville Boiler Co., Inc., New York 17, N.Y.
Marietta Metal Prods. Corp., Marietta, Pa.
May Oil Burner Corp., Baltimore 30, Md.
Morheat Corp., Lansing 12, Mich.
Mt. Hawley Mfg. Co., Peoria 4, Ill.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
National Home Eqpt. Co., New York 7, N.Y.
National Rad. Co., The, Johnstown, Pa.
National Steel Construction Co., Inc., of Indiana, Logansport, Ind.
New Yorker Steel Boiler Co., Inc., Colmar, Pa.
Norge Heat Div., Kalamazoo, Mich.
Norse Boiler Co., Inc., New Market, N. J.
Nu-Way Corp., The, Rock Island, Ill.
Oil Eqpt. Laboratories, Inc., Elizabeth, N.J.
Ontario Iron Works, Pulaski, N.Y.
Orr & Sembower, Inc., Reading, Pa.
Paragon Oil Burner Corp., Brooklyn 22, N.Y.
Peerless Heater Div., Boyertown, Pa.
Penn Boiler & Burner Mfg. Corp., Lancaster, Pa.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Quiet Automatic Burner Corp., Newark 4, N.J.
Ray Oil Burner Co., San Francisco 12, Calif.
Red Wing Oil Burner Co., Medford, Mass.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Robot Auto-Heat Corp., The, Middletown, Conn.
Russo, Inc., Thomas D., Boston 31, Mass.
Schwab Safe Co., Lafayette, Ind.
Silent Glow Oil Corp., Hartford 6, Conn.
Simplex Oil Heating Corp., Philadelphia 11, Pa.
Standard Arcoil Corp., Newark 8, N.J.
Steel Prods., Inc., W. Haven, Conn.
Stewart Oil Burner Co., Hanover, Pa.
Stout & Sons, David, St. Louis 17, Mo.
Surface Combustion Corp., Toledo 1, Ohio
Thatcher Furnace Co., Garwood, N.J.
Toridheet Div., Cleveland 2, Ohio
Triad Prods. Corp., Chicago 40, Ill.
U.S. Machine Div., Lebanon, Ind.
U.S. Rad. Corp., Detroit 26, Mich.
V&E Prods., Inc., Schuylkill Haven, Pa.
Viking Oil Co., Milwaukee, Wisc.
Waltham Oil Burner Co., E. Boston, Mass.
Wayne Home Eqpt. Co., Inc., Ft. Wayne 4, Ind.
Weatherall Eng., Inc., Providence, R.I.
Will-Burt Co., Orrville, Ohio
Williams Automatic, Inc., White Plains, N.Y.
Wm. Bros Boiler & Mfg. Co., Minneapolis, Minn.
Williams Div., Bloomington, Ill.
Winston Co., Inc., Newark 8, N.J.
York-Shipley, Inc., York, Pa.

Hot water, low pressure burner

Cleaver-Brooks Co., Milwaukee 12, Wisc.
General Electric Co., Bloomfield, N.J.
Scott-Newcomb, Inc., St. Louis 19, Mo.
U. S. Machine Div., Lebanon, Ind.
Williams Div., Bloomington, Ill.

Hot water, vaporizing

Brandenburg Industries, Inc., Baltimore 9, Md.
Brown Fintube Co., Elyria, Ohio
Dewey-Shepard Boiler Co., Indianapolis 2, Ind.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
HomEase Prods. Co., Paterson 3, N.J.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Michigan Burner Co., Detroit 28, Mich.

Hot water, wall flame vertical rotary

Fluid Heat Div., Baltimore 24, Md.
Marietta Metal Prods. Corp., Marietta, Pa.
Norse Boiler Co., Inc., New Market, N.J.
Timken Silent Automatic Div., Jackson, Mich.
Toridheet Div., Cleveland 2, Ohio
Viking Oil Co., Milwaukee, Wisc.

Steam, atomizing vertical rotary

Gem Fuel Oil Burners, Frankfort, Ky.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Marietta Metal Prods. Corp., Marietta, Pa.
Staffco Eng. Co., Chicago 38, Ill.

Steam, horizontal rotary

Hapman-Dutton Co., Kalamazoo, Mich.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.

Steam generator

Altherm, Inc., New York 21, N.Y.
Ames Iron Works, Inc., Oswego, N.Y.
Brown Fintube Co., Elyria, Ohio
Clayton Mfg. Co., El Monte, Calif.
Cleaver-Brooks Co., Milwaukee 12, Wisc.
Columbia Boiler Co., Pottstown, Pa.
Cyclotherm Div., Oswego, N.Y.
Dixon Boiler Works, Los Angeles, Calif.
Eclipse Fuel Eng. Co., Rockford, Ill.
Fulton Boiler Works, Inc., Fulton, N.Y.
Hapman-Dutton Co., Kalamazoo, Mich.
International Boiler Works Co., The, East Stroudsburg, Pa.
Johnston Bros., Inc., Ferrysburg, Mich.
Lattner Mfg. Co., P.M., Cedar Rapids, Mich.
Leahy Mfg. Co., Los Angeles 21, Calif.
Leffel & Co., The James, Springfield, Ohio
Lookout Boiler & Mfg. Co., Chattanooga 1, Tenn.
Mears-Kane-Offeldt, Inc., Bridgeport, Pa.
Morheat Corp., Lansing 12, Mich.
Mund Boilers, Inc., Los Angeles 63, Calif.
Ontario Iron Works, Pulaski, N.Y.
Orr & Sembower, Inc., Reading, Pa.
Parker Boiler Mfg. Co., Inc., Sid E., Los Angeles 11, Calif.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Riley Stoker Corp., Worcester, Mass.
Sellers Eng., Chicago, Ill.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Staffco Eng. Corp., Chicago 38, Ill.
Stewart Oil Burner Co., Hanover, Pa.
Springfield Boiler Co., Springfield, Ill.
Stout & Sons, David, St. Louis 17, Mo.
Superior Combustion Industries, Inc., New York, N.Y.
Titusville Iron Works, Inc., Titusville, Pa.
Wickes Boiler Co., Saginaw, Mich.
Wm. Bros Boiler & Mfg. Co., Minneapolis, Minn.
York-Shipley, Inc., York, Pa.

Steam, high pressure burner

Airflame, Inc., Waukegan, Ill.
Airtemp Div., Dayton 1, Ohio
Alan Distributors, Inc., Worcester, Mass.
Aldrich Co., Wyoming, Ill.
Altherm, Inc., New York 31, N.Y.
Ames Iron Works, Inc., Oswego, N.Y.
Anchor Div., New Albany, Ind.
Anchor Stove & Range Co., New Albany, Ind.
Auburn Burner Co., Auburn, Ind.
Berkley Mfg. Co., Philadelphia, Pa.
Bethlehem Fdry. & Machine Co., Bethlehem, Pa.
Billow Corp., Chicago 6, Ill.
Brown Fintube Co., Elyria, Ohio
Bryan Steam Corp., Peru, Ind.
Bryant Air Conditioning Corp., Philadelphia 23, Pa.
Chalmers Oil Burner Co., Minneapolis, Minn.
Cleaver-Brooks Co., Milwaukee 12, Wisc.
Coal-O-Matic Co., Trucksville, Pa.

BOILER-BURNER UNITS

Columbia Boiler Co., Pottstown, Pa.
Crane Co., Chicago 40, Ill.
Cyclotherm Div., Oswego, N.Y.
Delco Appliance Div., Rochester, N.Y.
Delta Heating Corp., Trenton 8, N.J.
DeSoto Oil Burner Co., York, Pa.
Dewey-Shepard Boiler Co., Indianapolis, Ind.
Eckhart Mfg. Co., Inc., Union, N.J.
Eclipse Fuel Eng. Co., Rockford, Ill.
Electric Furnace-Man., Inc., Emmaus, Pa.
Electrol Burner Mfg. Co., Inc.
Esso Standard Oil Co., New York 19, N.Y.
Fairchester Oil Co., Inc., Port Chester, N.Y.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Farrar & Trefts, Inc., Buffalo 12, N.Y.
Federal Boiler Co., Inc., Midland Park, N.J.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Fluid Heat Div., Baltimore 24, Md.
Fulton Boiler Works, Inc., Fulton, N.Y.
Gem Fuel Oil Burners, Frankfort, Ky.
General Automatic Prods. Corp., Philadelphia 23, Pa.
General Heating Prods. Co., Philadelphia, Pa.
General Machine Co., Inc., Emmaus, Pa.
General Oil Htg. Corp., W. Hartford, Conn.
Gibraltar Corp. of America, Inc., Brooklyn, N.Y.
Gilbert & Barker Mfg. Co., West Springfield, Mass.
A. Greene Mfg. Co., Philadelphia, Pa.
Hapman-Dutton Co., Kalamazoo, Mich.
Hart Heat Div., Peoria, Ill.
Harvey-Whipple, Inc., Springfield, Mass.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Heil Co., The, Milwaukee 1, Wisc.
Herco Oil Burner Corp., Lancaster, Pa.
Hershey Machine & Fdry. Co., Manheim, Pa.
HomEase Prods. Co., Paterson 3, N.J.
International Heater Co., Utica, N.Y.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Johnson Co., S.T., Oakland, Calif.
Johnston Bros., Inc., Ferrysburg, Mich.
Kewanee-Ross Corp., Kewanee, Ill.
King Boiler & Furnace Co., Shade Gap, Pa.
Kohler Co., Kohler, Wisc.
Kresno-Stamm Mfg. Co., Palisades Park, Calif.
Leahy Mfg. Co., Los Angeles 21, Calif.
Leffel & Co., The James, Springfield, Ohio
Major Oil Burner Co., Philadelphia 22, Pa.
Manville Boiler Co., Inc., New York 17, N.Y.
Marietta Metal Prods. Corp., Marietta, Pa.
May Oil Burner Corp., Baltimore 30, Md.
Metro Oil Burner Mfg. Co., Inc., Easthampton, Mass.
Morheat Corp., Lansing 12, Mich.
Mt. Hawley Mfg. Co., Peoria 4, Ill.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
National Home Eqpt. Co., New York 7, N.Y.
National Radiator Co., The, Johnstown, Pa.
New Yorker Steel Boiler Co., Inc., Colmar, Pa.
Norge Heat, Div., Kalamazoo, Mich.
Norse Boiler Co., Inc., New Market, N.J.
Nu-Way Corp., The, Rock Island, Ill.
Oil Eqpt. Laboratories, Inc., Elizabeth, N.J.
Ontario Iron Works, Pulaski, N.Y.
Orr & Sembower, Inc., Reading, Pa.
Paragon Oil Burner Corp., Brooklyn 22, N.Y.
Peabody Eng. Corp., New York 36, N.Y.
Peerless Heater Div., Boyertown, Pa.
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Robot Auto-Heat Corp., The, Middletown, Conn.
Russo, Inc., Thomas D., Boston 31, Mass.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Schwab Safe Co., Lafayette, Ind.
Selectrol Eng. Co., Brooklyn 23, N.Y.
Silent Glow Oil Corp., Hartford 6, Conn.
Simplex Oil Heating Corp., Philadelphia 11, Pa.
Sinclair Refining Co., New York, N.Y.
Smith Co., Inc., H.B., Westfield, Mass.
Staffco Eng. Co., Chicago 38, Ill.
Standard Arcoil Corp., Newark 8, N.J.
Steel Prods., Inc., W. Haven, Conn.
Stewart Oil Burner Co., Hanover, Pa.
Stout & Sons, David, St. Louis 17, Mo.
Stutzman Oil Burner Co., Cliffton Heights, Pa.
Surface Combustion Corp., Toledo 1, Ohio
Thatcher Furnace Co., Garwood, N.J.
Titusville Iron Works Div., Titusville, Pa.
Toridheet Div., Cleveland 2, Ohio
Triad Prods. Corp., Chicago 40, Ill.
Tru-Heet Co., Trenton, N.J.
U.S. Machine Div., Lebanon, Ind.
U.S. Radiator Corp., Detroit 26, Mich.
V&E Prods., Inc., Schuylkill Haven, Pa.
Viking Oil Co., Milwaukee, Wisc.
Waltham Oil Burner Co., E. Boston, Mass.
Wayne Home Eqpt. Co., Inc., Fort Wayne 4, Ind.
Weatherall Eng., Inc., Providence, R.I.
Wilgus Mfg. Co., Los Angeles 21, Calif.
Williams Automatic, Inc., White Plains, N.Y.
Wm. Bros Boiler & Mfg. Co., Minneapolis, Minn.
Williams Div., Bloomington, Ill.
Winston Co., Inc., Newark, N.J.
York-Shipley, Inc., York, Pa.

Steam, low pressure burner

Cleaver-Brooks Co., Milwaukee 12, Wisc.
General Electric Co., Bloomfield, N.J.
Scott-Newcomb, Inc., St. Louis 19, Mo.
Simplex Oil Heating Corp., Philadelphia 11, Pa.
U.S. Machine Div., Lebanon, Ind.
Williams Div., Bloomington, Ill.

Steam, vaporizing

Brown Fintube Co., Elyria, Ohio
Clayton Mfg. Co., El Monte, Calif.
Gibraltar Corp. of America, Inc., Brooklyn, N.Y.
Marietta Metal Prods. Corp., Marietta, Pa.
Michigan Burner Co., Detroit 28, Mich.
Wilgus Mfg. Co., Los Angeles 21, Calif.

Steam, wall flame vertical rotary

Fluid Heat Div., Baltimore 24, Md.
Marietta Metal Prods. Corp., Marietta, Pa.
Norse Boiler Co., Inc., New Market, N.J.
Toridheet Div., Cleveland 2, Ohio
Viking Oil Co., Milwaukee, Wisc.

Boilers, Domestic

Coal (to 2,000 sq. ft. steam)

Burnham Corp., Irvington, N.J.
Crane Co., Chicago 40, Ill.
Dunkirk Radiator Corp., Dunkirk, N.Y.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Heating Prods. Co., Philadelphia, Pa.
General Machine Co., Inc., Emmaus, Pa.
International Boiler Works Co., The, East Stroudsburg, Pa.
International Heater Co., Utica, N.Y.
Kewanee-Ross Corp., Kewanee, Ill.
Loline Steel Boiler Co., Allentown, Pa.
National Radiator Co., The, Johnstown, Pa.
Ontario Iron Works, Pulaski, N.Y.
Peerless Heater Div., Boyertown, Pa.
Petrol Oil Burner Mfg. Co., Inc., Malden 48, Mass.
Smith Co., The, H.B., Westerfield, Mass.
Standard Arcoil Corp., Newark 8, N.J.
Stewart Oil Burner Co., Hanover, Pa.
Terre Haute Boiler Works Co., Terre Haute, Ind.
Thatcher Furnace Co., Garwood, N.J.
Titusville Iron Works Co., The, Titusville, Pa.
U.S. Radiator Corp., Detroit 26, Mich.
Utica Radiator Corp., Utica, N.Y.
V&E Prods., Inc., Schuylkill Haven, Pa.
Weil-McLain Co., Michigan City, Ind.
Wise Furnace Co., The, Newark, Ohio

Gas (to 2,000 sq. ft. steam)

Acme Heating Div., W. Hartford, Conn.
Aldrich Co., Wyoming, Ill.
Alert Boiler & Mfg. Co., Detroit 27, Mich.
Altherm, Inc., New York 21, N.Y.
Brandenburg Industries, Inc., Baltimore, Md.
Brown Fintube Co., Elyria, Ohio
Bryan Steam Corp., Peru, Ind.
Bryant Heater Div., Cleveland, Ohio
Columbia Boiler Co., Pottstown, Pa.
Delco Appliance Div., Rochester, N.Y.
Delta Heating Corp., Trenton, N.J.
Dewey-Shepard Boiler Co., Indianapolis 2, Ind.
Dunkirk Radiator Corp., Dunkirk, N.Y.
Federal Boiler Co., Inc., Midland Park, N.J.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Automatic Prods. Corp., Baltimore, Md.
General Electric Co., Bloomfield, N.J.
General Heating Prods. Co., Philadelphia, Pa.
Gibraltar Corp. of America, Inc., Brooklyn, N.Y.

Harvey-Whipple, Inc., Springfield, Mass.
Heil Co., The, Milwaukee 1, Wisc.
International Boiler Works Co., The, East Stroudsburg, Pa.
Kewanee-Ross Corp., Kewanee, Ill.
Manville Boiler Co., Inc., New York 17, N.Y.
Morheat Corp., Lansing 12, Mich.
Mt. Hawley Mfg. Co., Peoria 4, Ill.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
National Radiator Co., The, Johnstown, Pa.
Norge Heat Div., Kalamazoo, Mich.
Ontario Iron Works, Pulaski, N.Y.
Peerless Heater Div., Boyertown, Pa.
Penn Boiler & Burner Mfg. Corp., Lancaster, Pa.
Pennsylvania Furnace & Iron Co., Warren, Pa.
Petrol Oil Burner Mfg. Co., Inc., Malden 48, Mass.
Portmar Boiler Co., Inc., Brooklyn, N.Y.
Republic Prods. Co., Philadelphia, Pa.
Richmond Rad. Co., New York 17, N.Y.
Smith Co., The H.B., Westerfield, Mass.
Standard Arcoil Corp., Newark 8, N.J.
Stewart Oil Burner Co., Hanover, Pa.
Struther Wells Corp., Titusville, Pa.
Surface Combustion Corp., Toledo 1, Ohio
Synchronous Flame, Inc., Chicago 4, Ill.
Terre Haute Boiler Works Co., Terre Haute, Ind.
Thatcher Furnace Co., Garwood, N.J.
Titusville Iron Works Co., The, Titusville, Pa.
U.S. Radiator Corp., Detroit 26, Mich.
Utica Radiator Corp., Utica, N.Y.
Utica Structural Steel, Inc., Utica 2, N.Y.
Viking Mfg. Corp., Cleveland, Ohio
Viking Oil Co., Milwaukee, Wisc.
Waterfilm Boilers, Inc., Jersey City 7, N.J.
Wayne Home Eqpt. Co., Inc., Ft. Wayne 4, Ind.
Weil-McLain Co., Michigan City, Ind.
Wescott-Alexander, Inc., Madison, N.J.
Williams Automatic, Inc., White Plains, N.Y.
Williams & Davis Boiler & Welding Co., Dallas, Texas
Wise Furnace Co., The, Newark, Ohio
York-Shipley, Inc., York, Pa.

Oil (to 2,000 sq. ft. steam)

Acme Heating Div., W. Hartford 10, Conn.
Airtemp Div., Dayton 1, Ohio
Aldrich Co., Wyoming, Ill.
Alert Boiler & Mfg. Co., Detroit 27, Mich.
Altherm, Inc., New York 21, N.Y.
Anchor Div., New Albany, Ind.
Atlantic Steel Boiler Co., Inc., Philadelphia 46, Pa.
Boggs Boiler Co., Akron, Ohio
Brandenburg Industries. Inc., Baltimore 9, Md.
Brown Fintube Co., Elyria, Ohio
Brown Products Co., Forest Hills, N.Y.
Bryan Steam Corp., Peru, Ind.
Bryant Air Conditioning Corp., Philadelphia 23, Pa.
Burnham Corp., Irvington, N.Y.
Chalmers Oil Burner Co., Minneapolis, Minn.
Columbia Boiler Co., Pottstown, Pa.
Combination Boiler Co., Benton Harbor, Mich.
Crane Co., Chicago 40, Ill.
Crotty Mfg. Co., Inc., Flushing, N.Y.
Delco Appliance Div., Rochester, N.Y.
Delta Heating Corp., Trenton 8, N.J.
Dewey-Shepard Boiler Co., Indianapolis 2, Ind.
Dunkirk Radiator Corp., Dunkirk, N.Y.
Electrol Burner Mfg. Co., Inc., Rutherford, N.J.
Federal Boiler Co., Inc., Midland Park, N.J.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Automatic Prods. Corp., Baltimore, Md.
General Electric Co., Bloomfield, N.J.
General Heating Products Co., Philadelphia, Pa.
General Machine Co., Inc., Emmaus, Pa.
General Thriftmaster Products, Philadelphia, Pa.
Gibraltar Corp. of America Inc., Brooklyn, N.Y.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Harner Boiler Corp., Brooklyn 12, N.Y.
Hart Heat Div., Peoria, Ill.
Harvey-Whipple, Inc., Springfield, Mass.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Heil Co., The, Milwaukee 1, Wisc.
International Boiler Works Co., The, East Stroudsburg, Pa.
International Heater Co., Utica, N.Y.
Johnson, S. T., Co., Oakland, Calif.
Kewanee-Ross Corp., Kewanee, Ill.
King Boiler & Furnace Co., Shade Gap, Pa.
Lolino Steel Boiler Co., Allentown, Pa.
Lycoming-Spencer Div., Williamsport, Pa.
Manville Boiler Co., Inc., New York 17, N.Y.
Marietta Metal Prods. Corp., Marietta, Ohio
Morheat Corp., Lansing 12, Mich.
Mt. Hawley Mfg. Co., Peoria 4, Ill.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
National Oil Corp., Richmond, Va.
National Radiator Co., The, Johnstown, Pa.
New Yorker Steel Boiler Co., Inc., Colmar, Pa.
Norge Heat Div., Kalamazoo, Mich.
Norse Boiler Co., Inc., New Market, N.J.
Oil Eqpt. Laboratories, Inc., Elizabeth, N.J.
Ontario Iron Works, Pulaski, N.Y.
Otto Boiler Co., Inc., Springfield, Ill.
Peerless Heater Div., Boyertown, Pa.
Penn Boiler & Burner Mfg. Corp., Lancaster, Pa.
Petrol Oil Burner Mfg., Inc., Malden 48, Mass.
Portmar Boiler Co., Inc., Brooklyn, N.Y.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Quiet Automatic Burner Corp., Newark 4, N.J.
Republic Prods. Co., Philadelphia, Pa.
Riley Stoker Corp., Worcester, Mass.
Schemenauer Mfg. Co., Holland, Ohio
Seidelhuber Iron & Brass Works, Inc., Seattle 4, Wash.
Selectrol Eng. Co., Brooklyn 23, N.Y.
Shepard Heater Co., Inc., Terre Haute, Ind.
Smith Co., The H.B., Westfield, Mass.
Smith Twin Tubular Boiler Co., Inc., Philadelphia 35, Pa.
Standard Arcoil Corp., Newark 8, N.J.
Stewart Oil Burner Co., Hanover, Pa.
Struthers Wells Corp., Titusville, Pa.
Surface Combustion Corp., Toledo 1, Ohio
Synchronous Flame, Inc., Chicago 4, Ohio
Terre Haute Boiler Works Co., Terre Haute, Ind.
Thatcher Furnace Co., Garwood, N.J.
Titusville Iron Works Co., The, Titusville, Pa.
Toridheet Div., Cleveland 2, Ohio
U.S. Radiator Corp., Detroit 26, Mich.
Utica Radiator Corp., Utica, N.Y.
Utica Structural Steel, Inc., Utica 2, N.Y.
V&E Prods. Inc., Schuylkill Haven, Pa.
Vapor Heating Corp. Chicago 23, Ill.
Viking Mfg. Corp., Cleveland, Ohio
Viking Oil Co., Milwaukee, Wisc.
Waterfilm Boilers, Inc., Jersey City 7, N.J.
Wayne Home Eqpt. Co., Inc., Ft. Wayne 4, Ind.
Weatherall Eng., Inc., Providence, R.I.
Weil-McLain Co., Michigan City, Ind.
Westcott-Alexander, Inc., Madison, N.J.
Williams Automatic, Inc., White Plains, N.Y.
Williams & Davis Boiler & Welding Co., Dallas, Texas
Williams Div., Bloomington, Ill.
Winston Co., Inc., Newark, N.J.
Wise Furnaee Co., The, Newark, Ohio
York-Shipley, Inc., York, Pa.
Zambelli Boiler Works, Philadelphia 25, Pa.

Bulk Plant Eng.

Henwood Associates, Roy M., New York 6, N. Y.

Burner Parts, Misc.

Air cones & diffusers

Airflame, Inc., Waukegan, Ill.
Berkley Mfg. Co., Philadelphia, Pa.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Chandler Co., Cedar Rapids, Iowa
Eddington Metal Specialty Co., Eddington, Pa.
Electric Motors Serv., Philadelphia, Pa.
General Machine Co., Inc., Emmaus, Pa.
HomEase Prods., Inc., Paterson, N. J.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Oil Eqpt. Laboratories, Inc., Elizabeth, N. J.
Peabody Eng. Corp., New York 36, N. Y.
Petrol Oil Burner Mfg. Co., Inc., Malden 48, Mass.
Quiet Automatic Burner Corp., Newark 4, N.J.
Rockwell Co., W. S., Fairfield, Conn.
S. K. Co., Inc., The, Camden, N.J.

Combustion heads

Allied Eng. Co., Allston 34, Mass.
Boston Machine Works Co., Lynn, Mass.
Fuel Econ-O-Mizer Co., Providence 5, R.I.
Madsen Service, Minneapolis, Minn.
Modern Die & Machine Co., Boston 25, Mass.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
National Fuel Conservation Co., Inc., White Plains, N.Y.
Robot Auto-Heat Corp., Middletown, Conn.
Volcano Burner Corp., New York 61. N.Y.

Electrodes, Ignition

Auburn Spark Plug Co., Inc., Auburn, N.Y.
Crown Eng. Corp., Keyport, N.J.

BURNER PARTS, MISC.

Dielectric Prods. Co., Inc., Jersey City 5, N.J.
Electrical Components Co., Newark 3, N.J.
HomEase Prods. Div., Inc., Paterson, N.J.
Hydrovalve Co., Brooklyn 3, N.Y.
Mechanical Prods. Co., Seattle 4, Wash.
Ray Oil Burner Co., San Francisco 12, Calif.

Flame Mirrors

Eddington Metal Specialty Co., Eddington, Pa.
Steinen Mfg. Co., Wm., Newark 5, N.J.

Fuses

Bussmann Mfg. Co., St. Louis 7, Mo.

Ignition Assemblies

Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Crown Eng. Corp., Keyport, N.J.
Dielectric Prods. Co., Inc., Jersey City 5, N.J.
Electrical Components Co., Newark 3, N.J.
HomEase Prods. Div., Inc., Paterson, N.J.
Hydrovalve Co., Brooklyn 3, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Red Wing Oil Burner Co., Medford, Mass.
Reliance Prods. Corp., Portland 14, Ore.
Union Spring & Mfg. Co., Jersey City, N.J.

Ignition Terminals

Aircraft-Marine Prods. Inc., Harrisburg, Pa.
Rajah Co., The, Bloomfield, N.J.

Insulators, Ignition Ceramic

American Lava Corp., Chattanooga 5, Tenn.
Crown Eng. Corp., Keyport, N.J.
Dielectric Prods. Co., Jersey City 5, N.J.
HomEase Prods. Div., Inc., Paterson, N.J.
Hydrovalve Co., Brooklyn 3, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.

Radio—Interference Eliminators

HomEase Prods. Div., Inc., Paterson, N.J.
Sprague Electric Co., N. Adams, Mass.
Union Spring & Mfg. Co., Jersey City, N.J.

Steam Atomizing

Hammel Oil Burning Eqpt. Co., Providence, R.I.

Cable

High Tension

Chase Brass & Copper Co., Waterbury 20, Conn.
Chester Cable Corp., Chester, N.Y.

Armored, Three-Wire

Chester Cable Corp., Chester, N.Y.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
U. S. Rubber Co., New York 20, N.Y.

Armored, Five-Wire

Chester Cable Corp., Chester, N.Y.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
U. S. Rubber Co., New York 20, N.Y.

Calculators

Heat Loss

Calculator Specialties Co., Chicago, Ill.
Climatemaker Slide Rule, Bloomington, Ill.

Chimney

Liners

Condensation Eng. Corp., Chicago 51, Ill.
The Excelsior Steel Furnace Co., Chicago 6, Ill.
Gary Steel Prods. Co., Gary, Ind.
Helman Chimney Sales Co., Fredericksburg, Va.
Sall Mountain Co., Hamilton, Ohio
Van-Packer Corp., Chicago 1, Ill.

Cleaning Tools

Breuer Electric Mfg. Co., Chicago 49, Ill.
Master Supply Co., Inc., Haverstraw, N.Y.
Schaefer Brush Mfg. Co., Milwaukee 4, Wisc.

Extensions

Artis Metals Co., Inc., Boise, Idaho
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Therm Gas Generator Co., Inc., Seattle, Wash.
Venturi Chimney Cap Co., Cleveland 9, Ohio

Hoods

Adelta Mfg. Co., Inc., Philadelphia 46, Pa.
Artis Metals Co., Inc., Boise, Idaho
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Gary Steel Prods. Co., Gary, Ind.
Therm Gas Generator Co., Inc., Seattle, Wash.
Venturi Chimney Cap Co., Cleveland 9, Ohio
Walker Mfg. & Sales Corp., St. Joseph, Mo.

Prefabricated Chimneys

Chimney Sales Corp., Fredericksburg, Va.
Condensation Eng. Corp., Chicago 51, Ill.
General Prods. Inc., Fredericksburg, Va.
Majestic Co., Inc., The, Huntington, Ind.
Robot Auto-Heat Corp., The, Middletown, Conn.

Caps

Little Burner Co., Inc., H. C., San Rafael, Calif.
Venturi Chimney Cap Co., Cleveland 9, Ohio
Walker Mfg. & Sales Corp., St. Joseph, Mo.
Wigwam Flue Top Co., Arlington, Mass.

Compounds & Chemicals

Boiler Sealing

Ampion Corp., Long Island City 1, N.Y.
Hercules Chemical Co., Inc., New York 13, N.Y.
Kalmide Chemicals, Inc., New York 17, N.Y.
Kenite Laboratory, Madison, N.J.
King Chemical Co., Mt. Vernon, N.Y.
Metallizing Co. of America, Chicago, Ill.
Park-Hill Chemical Corp., Mt. Vernon, N.Y.
Radiator Specialty Co., Charlotte, N.C.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.
Sunshine Chemical Co., Inc., John, Chicago 6, Ill.
"X" Laboratories, Inc., New York, N.Y.

Boiler Water Treatment

Ampion Corp., Long Island City 1, N.Y.
Atlantic Research Laboratories Corp., Long Island City 1, N.Y.
Beck Co., A.C., Minneapolis 11, Minn.
Cannon Chemical Co., Inc., Cambridge 41, Mass.
Dominion Chemical Co., Inc., New York, N.Y.
Economy Lubricating Co., Charlestown 29, Mass.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Gamlen Chemical Co., E. Paterson, N.J.
Harvey, Inc., Sid, Valley Stream, N.Y.
Hercules Chemical Co., Inc., New York 13, N.Y.
Kalmide Chemicals, Inc., New York 17, N.Y.
Kenite Laboratory, Madison, N.J.
King Chemical Co., Mt. Vernon, N.Y.
Kleenit Chemical Co., Medford, Mass.
Norman Chemical Co., St. Paul 4, Minn.
Parke-Hill Chemical Corp., Mt. Vernon, N.Y.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.
Strong, Carlisle & Hammond Co., Cleveland 13, Ohio
Sunshine Chemical Co., Inc., John, Chicago 6, Ill.
Water Treatment Co. of America, Pittsburgh 12, Pa.

Fueloil Treatment

Allen Co., Robert, Mechanicville, N.Y.
Amionic Chemical Co., Taunton, Mass.
Ampion Corp., Long Island City 1, N.Y.
Atlantic Research Laboratories Corp., Long Island City 1, N.Y.
Beck Co., A.C., Minneapolis 11, Minn.
Cannon Chemical Co., Inc., Cambridge 41, Mass.
Coughlan Co., C.N., W. Orange, N.J.
Cristy Specialty Corp., Worcester, Mass.
Delavan Mfg. Co., W. Des Moines, Iowa
Dominion Chemical Co., Inc., New York, N.Y.
Economy Lubricating Co., Charlestown 29, Mass.
Eds-Wil Engineering, Chicago 47, Ill.
Elmira Steel Co., Brooklyn, N.Y.
Enterprise Heat & Power Co., Chicago 22, Ill.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Gamlen Chemical Co., E. Paterson, N.J.
Harvey, Inc., Sid, Valley Stream, N.Y.
Hercules Chemical Co., Inc., New York 13, N.Y.
Kalmide Chemicals, Inc., New York 17, N.Y.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Kemix Laboratories, W. Springfield, Pa.
King Chemical Co., Mt. Vernon, N.Y.
Kleenit Chemical Co., Medford, Mass.
National Aluminate Corp., Chicago 38, Ill.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Norman Chemical Co., St. Paul 4, Minn.
Parke-Hill Chemical Corp., Mt. Vernon, N.Y.
Radiator Specialty Co., Charlotte, N.C.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.
Shell Chemical Corp., New York, N.Y.
U.S. Petroleum Co., Clifton, N.J.

Furnace Cement

Armstrong Co., Chicago 28, Ill.
Carolina Refractories Co., Hartsville, S.C.
Clinton Paint Co., Clinton, N.Y.

Eagle-Picher Co., The, Cincinnati 1, Ohio
Gamlen Chemical Co., E. Paterson, N.J.
Hercules Chemical Co., Inc., New York 13, N.Y.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Pecora Paint Co., Inc., Philadelphia 40, Pa.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.
Sall Mountain Co., Hamilton, Ohio
Walsh Refractories Corp., St. Louis 7, Mo.

Grease Removing

Allen Co., Robert C., Mechanicville, N.Y.
Atlantic Research Laboratories Corp., Long Island City 1, N.Y.
Cannon Chemical Co., Inc., Cambridge 41, Mass.
Gamlen Chemical Co., E. Paterson, N.J.
Harvey, Inc., Sid, Valley Stream, N. Y.
King Chemical Co., Mt. Vernon, N.Y.
Norman Chemical Co., St. Paul 4, Minn.
Parke-Hill Chemical Corp., Mt. Vernon, N.Y.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.
Sunshine Chemical Co., John, The, Chicago 6, Ill.

Hand Cleaning

Ampion Corp., Long Island City 1, N.Y.
Atlantic Research Laboratories Corp., Long Island City 1, N.Y.
Gamlen Chemical Co., E. Paterson, N.J.
King Chemical Co., Mt. Vernon, N.Y.
Muench Laboratories, Inc., The, St. Louis 8, Mo.
Norman Chemical Co., St. Paul 4, Minn.
Parke-Hill Chemical Corp., Mt. Vernon, N.Y.
Radiator Specialty Co., Charlotte, N.C.
S.O.S. Products Inc., Brooklyn 22, N.Y.

Heat Exchanger Cleaning

Gamlen Chemical Co., E. Paterson, N.J.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Parke-Hill Chemical Corp., Mt. Vernon, N.Y.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.

Oil Absorbent

Ready-Crete Co., Milwaukee, Wisc.
Tankit Co., Newark, N.J.

Pipe Joint, Oil

Buckeye Iron & Brass Works, Dayton 1, Ohio
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Harbinson & Co., Inc., James K., Buffalo 2, N.Y.
Harvey, Inc., Sid, Valley Stream, N. Y.
Hercules Chemical Co., Inc., New York 13, N.Y.
Kenite Laboratory, Madison, N.J.
Key Co., E. St. Louis, Ill.
King Chemical Co., Mt. Vernon, N.Y.
Lake Chemical Co., Chicago 12, Ill.
Pecora Paint Co., Inc., Philadelphia 40, Pa.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Radiator Specialty Co., Charlotte, N.C.
Rector Well Equipment Co., Inc., Houston 2, Tex.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.
Sunshine Chemical Co., Inc., John, Chicago 6, Ill.
Whitlam Mfg. Co., J.C., Wadsworth, Ohio

Pipe Joint, Steam

Cantleek Products Corp., Flushing 54, N.Y.
Grinnell Co., Inc., Providence 1, R.I.
Harbinson & Co., Inc., James K., Buffalo 2, N.Y.
Hercules Chemical Co., Inc., New York 13, N.Y.
Kenite Laboratory, Madison, N.J.
Key Co., E. St. Louis, Ill.
King Chemical Co., Mt. Vernon, N.Y.
Lake Chemical Co., Chicago 12, Ill.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Radiator Specialty Co., Charlotte, N.C.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.
Sunshine Chemical Co., Inc., John, Chicago 6, Ill.
Whitlam Mfg. Co., J. C., Wadsworth, Ohio
"X" Laboratories, Inc., New York, N.Y.

Rust Preventing

Atlantic Research Laboratories Corp., Long Island City 1, N.Y.
Canon Chemical Co., Inc., Cambridge 41, Mass.
Dominion Chemical Co., Inc., New York, N.Y.
Gamlen Chemical Co., E. Paterson, N.J.
Harbinson & Co., Inc., James K., Buffalo 2, N.Y.
Hercules Chemical Co., Inc., New York 13, N.Y.
Kalmide Chemicals, Inc., New York 17, N.Y.
Kenite Laboratory, Madison, N.J.
Kleenit Chemical Co., Medford, Mass.
Parke-Hill Chemical Corp., Mt. Vernon, N.Y.
S.O.S. Products Co., Inc., Brooklyn 22, N.Y.
Sunshine Chemical Co., Inc., John, Chicago 6, Ill.
"X" Laboratories, Inc., New York, N.Y.

Soot Destroyer

Allen Co., Robert C., Mechanicville, N.Y.
Amionic Chemical Co., Taunton, Mass.
Ampion Corp., Long Island City 1, N.Y.
Atlantic Research Laboratories Corp., Long Island City 1, N.Y.
Beck Co., A. C., Minneapolis 11, Minn.
Cleen Sweep Co., So. Lansing 9, Mich.
Coughlan Co., C. N., West Orange, N.J.
Dominion Chemical Co., Inc., New York, N.Y.
Elmira Steel Co., Brooklyn, N.Y.
Gamlen Chem. Co., East Paterson, N.J.
Harvey, Inc., Sid, Valley Stream, N.Y.
Healy-Ruff Co., St. Paul 14, Minn.
Hercules Chem. Co., Inc., New York 13, N.Y.
Kalmide Chemicals, Inc., New York 17, N.Y.
Kenite Laboratory, Madison, N.J.
King Chemical Co., Mt. Vernon, N.Y.
Kleenit Chemical Co., Medford, Mass.
Marine Electrolysis Eliminator Co., Michigan City, Ind.
Miller Prods. Co., Lansing, Mich.
National Aluminate Corp., Chicago 38, Ill.
Norman Chemical Co., St. Paul 4, Minn.
Parke-Hill Chemical Corp., Mt. Vernon, N.Y.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Rad. Specialty Co., Charlotte, N.C.
S.O.S. Prods. Co., Inc., Brooklyn 22, N.Y.
Simplex Heater Control Co., St. Paul, Minn.
Standard Railway Fusee Corp., Needham Heights 94, Mass.
Sunshine Chemical Co., Inc., John, Chicago 6, Ill.
Water Treatment Co. of America, Pittsburgh 12, Pa.

Water Indicator

Gasoilair Eqpt. Co., New Haven, Conn.

Controls

Air Flow Switch

Drying Systems, Inc., Chicago 40, Ill.

Air Pressure

Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Eclipse Fuel Eng. Co., Rockford, Ill.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Hays Corp., The, Michigan City 7, Ind.
W. S. Rockwell Co., Fairfield, Conn.
Square D Co., Milwaukee 12, Wisc.
Strong, Carlisle & Hammond Co., Cleveland 13, Ohio
Watts Regulator Co., Lawrence, Mass.

Combination Fan & Limit

A-P Controls Corp., Milwaukee, Wisc.
Ace Instrument Co., Inc., Brooklyn 2, N.Y.
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
General Electric Co., Morrison, Ill.
Hays Corp., The, Michigan City 7, Ind.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Goshen, Ind.
Perfex Corp., Milwaukee 7, Wisc.

Damper Regulating

Ace Instrument Co., Inc., Brooklyn 2, N.Y.
Barber-Colman Co., Rockford, Ill.
Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Cole Sewell Eng. Co., St. Paul 14, Minn.
Defender Instrument & Regulator Co., St. Louis, Mo.
General Controls Co., Glendale 1, Calif.
General Power Plant Corp., Ossining, N.Y.
Gerett Co., M. A., Milwaukee, Wisc.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Hart & Cooley Mfg. Co., Holland, Mich.
Hays Corp., The, Michigan City 7, Ind.
Heat Timer Corp., New York 12, N.Y.
Kol-Master Corp., Oregon, Ill.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
National Fuel Conservation Co., Inc., White Plains, N.Y.
Parker-Kalon Corp., New York 14, N.Y.
Perfex Corp., Milwaukee 7, Wisc.
Wilgus Mfg. Co., Los Angeles 21, Calif.

Draft

Ace Instrument Co., Inc., Brooklyn 2, N.Y.
Artis Metals Co., Inc., Boise, Idaho
Bailey Meter Co., Cleveland 10, Ohio
Bearlee Prods. Co., Green Bay, Wisc.
Boston Machine Works Co., Lynn, Mass.
Bressler Eng. Service, Oregon 1, Ill.
Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Cole Sewell Eng. Co., St. Paul 14, Minn.

Defender Instrument & Regulator Co., St. Louis, Mo.
Field Control Div., Mendota, Ill.
General Controls Co., Glendale 1, Calif.
General Power Plant Corp., Ossining, N.Y.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Harvey, Inc., Sid, Valley Stream, N.Y.
Hays Corp., The, Michigan City 7, Ind.
Heat Timer Corp., New York 12, N.Y.
Hotstream Heater Co., Cleveland, Ohio
Jordon Eng. Co., Hartford, Wisc.
Krueger Sentry Gauge Co., Inc., Green Bay, Wisc.
Lifetime Mfg. Co., Pemberville, Ohio
Mechanical Prods. Co., Seattle 4, Wash.
Miller Co., The, Meriden, Conn.
National Fuel Conservation Co., Inc., White Plains, N.Y.
Perfex Corp., Milwaukee 7, Wisc.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Salina Metal Prods., Salina, Kans.
Simplex Mfg. Co., Fond du Lac, Wisc.
Therm Gas Generator Co., Inc., Seattle, Wash.
Walker Mfg. & Sales Corp., St. Joseph, Mo.
Windmaster Corp., Columbus 8, Ohio
Windmaster Draft Control Co., Michigan City, Ind.

Electric Valve

Automatic Switch Co., Orange, N.J.
Barber-Colman Co., Rockford, Ill.
Bryant Heater Div., Cleveland, Ohio
Cary Mfg. Co., Waupaca, Wisc.
Cooper Co., Clark, Palmyra, N.J.
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
McCorkle Co., D. H., Berkeley, Calif.
McDonnell & Miller, Inc., Chicago 18, Ill.
Magnetrol, Inc., Chicago 23, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Perfex Corp., Milwaukee 7, Wisc.
Sarco Co., Inc., New York 1, N.Y.
Square D Co., Milwaukee 12, Wisc.
Union Spring & Mfg. Co., Jersey City, N.J.

Humidity

Barber-Colman Co., Rockford, Ill.
Cary Mfg. Co., Waupaca, Wisc.
General Controls Co., Glendale 1, Calif.
McDonnell & Miller, Inc., Chicago 18, Ill.
Minneapois-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.
Sarco Co., Inc., New York 1, N.Y.

Limit, Air Temperature

Barber-Colman Co., Rockford, Ill.
Crise Controls Div., Columbus 16, Ohio
Detroit Controls Corp., Detroit 8, Mich.
General Electric Co., Morrison, Ill.
General Controls Co., Glendale 1, Calif.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Mercoid Corp., The, Chicago 41, Ill.
Miller Co., The, Meriden, Conn.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.
Perfex Corp., Milwaukee 7, Wisc.
Ray Oil Burner Co., San Francisco 12, Calif.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Sampsel Time Control, Inc., Spring Valley, Ill.
Sarco Co., Inc., New York 1, N.Y.
Spencer Thermostat Div., Attleboro, Mass.
White-Rodgers Electric Co., St. Louis 6, Mo.

Limit, Steam Pressure

Bailey Meter Co., Cleveland 10, Ohio
Barber-Colman Co., Rockford, Ill.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Crise Controls Div., Columbus 16, Ohio
Detroit Controls Corp., Detroit 8, Mich.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Controls Co., Glendale 1, Calif.
General Electric Co., Morrison, Ill.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.
Perfex Corp., Milwaukee 7, Wisc.
Ray Oil Burner Co., San Francisco 12, Calif.
Sampsel Time Control, Inc., Spring Valley, Ill.
Strong, Carlisle & Hammond Co., Cleveland 13, Ohio
White-Rodgers Electric Co., St. Louis 6, Mo.
Wilgus Mfg. Co., Los Angeles 21, Calif.

Limit, Water Temperature

Barber-Colman Co., Rockford, Ill.
Crise Controls Div., Columbus 16, Ohio
Detroit Controls Corp., Detroit 8, Mich.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Controls Co., Glendale 1, Calif.
General Electric Co., Morrison, Ill.
Globe Controls Co., Newark, N.J.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.
Perfex Corp., Milwaukee 7, Wisc.
Ray Oil Burner Co., San Francisco 12, Calif.
Sampsel Time Control, Inc., Spring Valley, Ill.
Sarco Co., Inc., New York 1, N.Y.
Taco Heaters, Inc., Providence, R.I.
Thrush & Co., H. A., Peru, Ind.
White-Rodgers Electric Co., St. Louis 6, Mo.

Low Water

Diamond Power Specialty Corp., Lancaster, Ohio
Eclipse Fuel Eng. Co., Rockford, Ill.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Controls Co., Glendale 1, Calif.
Globe Controls Co., Newark, N.J.
McDonnell & Miller, Inc., Chicago 18, Ill.
Magnetrol, Inc., Chicago 23, Ill.
Maid-O-Mist, Inc., Chicago 41, Ill.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Newark Controls Co., Bloomfield, N.J.
Watts Regulator Co., Lawrence, Mass.

Oilburner Primary

Crise Controls Div., Columbus 16, Ohio
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
General Electric Co., Morrison, Ill.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Mechanical Prods. Co., Seattle 4, Wash.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.
Perfex Corp., Milwaukee 7, Wisc.
Ray Oil Burner Co., San Francisco 12, Calif.
Sampsel Time Control, Inc., Spring Valley, Ill.
White-Rodgers Electric Co., St. Louis 6, Mo.

Pneumatic Valve

Automatic Switch Co., Orange, N.J.
Cooper Co., Clark, Palmyra, N.J.
General Controls Co., Glendale 1, Calif.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Newark Controls Co., Bloomfield, N.J.
Ray Oil Burner Co., San Francisco 12, Calif.

Pressure Gauge

Eddington Metal Specialty Co., Eddington, Pa.
Newark Controls Co., Bloomfield, N.J.
Ray Oil Burner Co., San Francisco 12, Calif.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.

Relays, Plain

Automatic Switch Co., Orange, N.J.
Barber-Colman Co., Rockford, Ill.
Burke Eng. Co., Los Angeles 7, Calif.
Cutler-Hammer, Inc., Milwaukee 1, Wisc.
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.
Perfex Corp., Milwaukee 7, Wisc.
Ray Oil Burner Co., San Francisco 12, Calif.
Spencer Thermostat Div., Attleboro, Mass.
Square D Co., Milwaukee 12, Wisc.
White-Rodgers Electric Co., St. Louis 6, Mo.

Room Temperature

A-P Controls Corp., Milwaukee, Wisc.
Barber-Colman Co., Rockford, Ill.
Detroit Controls Corp., Detroit 8, Mich.
Dole Valve Co., Chicago 10, Ill.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Controls Co., Glendale 1, Calif.
General Electric Co., Morrison, Ill.
Iron Fireman Mfg. Co., Cleveland 11, Ohio

McCorkle Co., D. H., Berkeley, Calif.
Makomb Steel Prods. Co. Div., Macomb, Ill.
Mercoid Corp., The, Chicago 41, Ill.
Miller Co., The, Meriden, Conn.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.
Perfex Corp., Milwaukee 7, Wisc.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Sampsel Time Control, Inc., Spring Valley, Ill.
Sarco Co., Inc., New York 1, N.Y.
Spencer Thermostat Div., Attleboro, Mass.
Sterling, Inc., Milwaukee 12, Wisc.
Thrush & Co., H. A., Peru, Ind.
U. S. Rad. Corp., Detroit 26, Mich.
White-Rodgers Electric Co., St. Louis 6, Mo.

Safety, Combustion

Bailey Meter Co., Cleveland 10, Ohio
Barber-Colman Co., Rockford, Ill.
Combustion Control Corp., Boston, Mass.
Detroit Controls Corp., Detroit 8, Mich.
Drying Systems Inc., Chicago 40, Ill.
Eclipse Fuel Eng. Co., Rockford, Ill.
General Controls Co., Glendale 1, Calif.
Hays Corp., The, Michigan City 7, Ind.
Leahy Mfg. Co., Los Angeles 21, Calif.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.
Perfex Corp., Milwaukee 7, Wisc.
Ray Oil Burner Co., San Francisco 12, Calif.

Systems, Individual Room Temperature

Barber-Colman Co., Rockford, Ill.
Crise Controls Div., Columbus 16, Ohio
Fulton Sylphon Div., Knoxville, Tenn.
General Controls Co., Glendale 1, Calif.
Heat Timer Corp., New York 12, N.Y.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Penn Controls, Inc., Goshen, Ind.

Systems, Large Building Heating

Automatic Devices Co., Inc., Western Springs, Ill.
Bailey Meter Co., Cleveland 10, Ohio
Barber-Colman Co., Rockford, Ill.
Dunham Co., C. A., Chicago 6, Ill.
Fuel Watchman, Inc., New York 5, N.Y.
Hays Corp., The, Michigan City 7, Ind.
Heat Timer Corp., New York 12, N.Y.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Johnson Service Co., Milwaukee, Wisc.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Warren Webster & Co., Camden 5, N.J.

Systems, Power Plant Boiler

Ace Instrument Co., Inc., Brooklyn 2, N.Y.
Bailey Meter Co., Cleveland 10, Ohio
General Controls Co., Glendale 1, Calif.
General Power Plant Corp., Ossining, N.Y.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Hays Corp., The, Michigan City 7, Ind.
Leahy Mfg. Co., Los Angeles 21, Calif.
Lientz & Co., B. P., Kansas City 42, Mo.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Temperature Modulating

A-P Controls Corp., Milwaukee, Wisc.
Automatic Devices Co., Inc., Western Springs, Ill.
Barber-Colman Co., Rockford, Ill.
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
Heat Timer Corp., New York 12, N.Y.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Sarco Co., Inc., New York 1, N.Y.
Sterling, Inc., Milwaukee 12, Wisc.

Thermometers, Airconditioning Systems

Defender Instrument & Regulator Co., St. Louis, Mo.
General Controls Co., Glendale 1, Calif.
Marsh Corp., Jas. P., Skokie, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.
Sarco Co., Inc., New York 1, N.Y.
Weston Electrical Instrument Corp., Newark 5, N.J.

Thermometers, Heating Boilers

Bailey Meter Co., Cleveland 10, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Marsh Corp., Jas. P., Skokie, Ill.
New York Air Valve Corp., Brooklyn, N.Y.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.
Weston Electrical Instrument Corp., Newark 5, N.J.

Thermometers, Hot Water Storage Tanks

General Controls Co., Glendale 1, Calif.
Marsh Corp., Jas. P., Skokie, Ill.
New York Air Valve Corp., Brooklyn, N.Y.
O'Brien Steam Specialty Co., Inc., Syracuse 2, N.Y.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.
Sarco Co., Inc., New York 1, N.Y.
Weston Electrical Instrument Corp., Newark 5, N.J.

Thermometers, Warm Air Furnaces

A-P Controls Corp., Milwaukee, Wisc.
Bailey Meter Co., Cleveland 10, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
General Controls Co., Glendale 1, Calif.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.
Weston Electrical Instrument Corp., Newark 5, N.J.

Thermostats, Locking Devices

Thermolok Mfg. Co., Inc., Brooklyn 25, N.Y.

Time Switches

Automatic Controls Corp., Ann Arbor, Mich.
International Register Co., Chicago 12, Ill.
Miller-Harris Instrument Co., Milwaukee, Wisc.
Paragon Electric Co., Two Rivers, Wisc.
Tork Clock Co., Inc., Mt. Vernon, N.Y.

Variable Speed, Fan

Volu-Trol Co., St. Paul 9, Minn.

Water Level & Feeder

Bailey Meter Co., Cleveland 10, Ohio
Bell & Gossett Co., Morton Grove, Ill.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Cutler-Hammer, Inc., Milwaukee 1, Wisc.
Eclipse Fuel Eng. Co., Rockford, Ill.
General Controls Co., Glendale 1, Calif.
Hays Corp., The, Michigan City 7, Ind.
Johnson Corp., The, Three Rivers, Mich.
McDonnell & Miller, Inc., Chicago 18, Ill.
Magnetrol, Inc., Chicago 23, Ill.
Maid-O-Mist, Inc., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Newark Controls Co., Bloomfield, N.J.
Sarco Co., Inc., New York 1, N.Y.
Schaub, Fred H., Engineering Co. Inc., Chicago 23, Ill.
Square D Co., Milwaukee 12, Wisc.
Watts Regulator Co., Lawrence, Mass.

Weather Compensated

Automatic Devices Co., Inc., Western Springs, Ill.
Bell & Gossett Co., Morton Grove, Ill.
Detroit Controls Corp., Detroit 8, Mich.
Fuel Watchman, Inc., New York 5, N.Y.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Sarco Co., Inc., New York 1, N.Y.

Couplings

Flexible, Shaft

Climax Flexible Coupling Co., Cleveland 10, Ohio
De Laval Steam Turbine Co., Trenton 2, N.J.
Flexible Couplings Mfg. Co., Chicago 19, Ill.
General Machine Co., Inc., Emmaus, Pa.
Guardian Prods. Corp., Michigan City, Ind.
Harvey, Inc., Sid, Valley Stream, N.Y.
Hydrovalve Co., Brooklyn 3, N.Y.
Lord Mfg. Co., Erie, Pa.
Lovejoy Flexible Coupling Co., Chicago 44, Ill.
Simplex Oil Heating Corp., Philadelphia, Pa.
Thrush & Co., Peru, Ind.
Volcano Burner Corp., New York 61, N.Y.

Pipe

Barco Mfg. Co., Barrington, Ill.
Capitol Mfg. & Supply Co., Columbus, Ohio
Crane Co., Chicago 40, Ill.
General Automatic Prod. Corp., Baltimore, Md.
Grinnell Co., Inc., Providence 1, R.I.
Johns-Manville Corp., New York 16, N.Y.
Weatherhead Co., The, Cleveland 8, Ohio

Ducts

Aluminum

Acme Mfg. Co., Philadelphia 36, Pa.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.

DUCTS

Campbell Heating Co., Des Moines 17, Iowa
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Norwalk Airconditioning Corp., The, So. Norwalk, Conn.
Ohio Valley Hardware & Roofing Co., Evansville 2, Ind.
Swett Bros., Springfield, Mass.
U.S. Register Co., Battle Creek, Mich.
Viking Mfg. Corp., Cleveland, Ohio
Williamson Heater Co., The, Cincinnati 9, Ohio

Asbestos

Gustin-Bacon Mfg. Co., Kansas City 6, Mo.
Johns-Manville Corp., New York 16, N.Y.
Sall Mountain Co., Hamilton, Ohio

Coated Fabric

Flexible Tubing Corp., Guilford, Conn.
Grand Island Furnace & Supply Co., Grand Island, Nebr.

Dampers

Acme Mfg. Co., Phildelphia 36, Pa.
Air Controls Prods., Inc., Coopersville, Mich.
Armstrong Furnace Co., Columbus 12, Ohio
Barber-Colman Co., Rockford, Ill.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Chandler Co., Cedar Rapids, Ia.
Clayton & Lambert Mfg. Co., Louisville 10, Ky.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Excelsior Steel Furnace Co., The, Chicago 6, Ill.
Grand Island Furnace & Supply Co., Grand Island, Nebr.
Hart & Cooley Mfg Co., Holland, Mich.
Keith Furnace Co., Des Moines, Iowa
Lennox Furnace Co., Marshalltown, Iowa
Majestic Co., Inc., The, Huntington, Ind.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Fiber

Acme Mfg. Co., Philadelphia 36, Pa.
Adelta Mfg. Co., Inc., Philadelphia 46, Pa.
Anchor Div., New Albany, Ind.
Armstrong Furnace Co., Columbus 12, Ohio
Berger Furnace Co., Pittsburgh 6, Pa.
Chandler Co., Cedar Rapids, Ia.
Char-Gale Mfg. Co., Minneapolis, Minn.
Clayton & Lambert Mfg. Co., Louisville 10, Ky.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Corbman Bros., Inc., Philadelphia, Pa.
Excelsior Steel Furnace Co., The, Chicago 6, Ill.
Farquhar Furniture Co., The, Wilmington, Ohio
Grand Island Furnace & Supply Co., Grand Island, Nebr.
Gray Metal Prod. Inc., Rochester 3, N.Y.
Green Colonial Furnace Co., Des Moines, Iowa
Home Furnace Co., Holland, Mich.
International Heater Co., Utica, N.Y.
Jettronaire, Inc., Springdale, Pa.
Johns-Manville Corp., New York 16, N.Y.
Keith Furnace Co., Des Moines, Iowa
Lennox Furnace Co., Marshalltown, Iowa
Majestic Co., Inc., The, Huntington, Ind.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
Ohio Valley Hardware & Roofing Co., Evansville 2, Ind.
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Schecter Bros. Co., Philadelphia 22, Pa.
Steel City Furnace Corp., Springdale, Pa.
Swett Bros., Springfield, Mass.
U.S. Register Co., Battle Creek, Mich.
Williamson Heater Co., The, Cincinnati 9, Ohio
York-Shipley, Inc., York, Pa.

Fittings

Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Peerless Furnace & Fdry., Inc., Indianapolis, Ind.
Steel City Furnace Corp., Springdale, Pa.
U.S. Register Co., Battle Creek, Mich.
Williamson Heater Co., The, Cincinnati 9, Ohio
Sonoco Prods. Co., Hartsville, S.C.

Furnace Pipe, Round

Acme Mfg. Co., Philadelphia 36, Pa.
Adelta Mfg. Co., Inc., Philadelphia 46, Pa.
Anchor Div., New Albany, Ind.
Armstrong Furnace Co., Columbus 12, Ohio
Berger Furnace Co., Pittsburgh 6, Pa.
Buckeye Furnace Pipe Co., Columbus, Ohio
Chandler Co., Cedar Rapids, Iowa
Clayton & Lambert Mfg. Co., Louisville 10, Ky.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Corbman Bros., Inc., Philadelphia, Pa.
Excelsior Steel Furnace Co., The, Chicago 6, Ill.
Farquhar Furnace Co., The, Wilmington, Ohio
Gary Steel Prod. Co., Gary, Ind.
Grand Island Furnace & Supply Co., Grand Island, Nebr.
Gray Metal Prod. Inc., Rochester 3, N.Y.
Green Colonial Furnace Co., Des Moines, Iowa
Home Furnace Co., Holland, Mich.
International Heater Co., Utica, N.Y.
Jettronaire, Inc., Springdale, Pa.
Keith Furnace Co., Des Moines, Iowa
Lennox Furnace Co., Marshalltown, Iowa
Majestic Co., Inc., The, Huntington, Ind.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
Ohio Valley Hardware & Roofing Co., Evansville 2, Ind.
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Radiation Furnace Corp., Benton Harbor, Mich.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Steel City Furnace Corp., Springdale, Pa.
Thermo-Prods., Inc., North Judson, Ind.
U.S. Register Co., Battle Creek, Mich.
Vectaire Mfg. Co., Melrose, Mass.
Williamson Heater Co., The, Cincinnati 9, Ohio
York-Shipley, Inc., York, Pa.

Hangers

Linden Metal Specialty Co., Anoka, Minn.

Prefabricated, Galvanized

Acme Mfg. Co., Philadelphia 36, Pa.
Adelta Mfg. Co., Inc., Philadelphia 46, Pa.
Armstrong Furnace Co., Columbus 12, Ohio
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Bryant Heater Div., Cleveland, Ohio
Campbell Heating Co., Des Moines 17, Iowa
Chandler Co., Cedar Rapids, Iowa
Char-Gale Mfg. Co., Minneapolis, Minn.
Clayton & Lambert Mfg. Co., Louisville 10, Ky.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Corbman Bros., Inc., Philadelphia, Pa.
Excelsior Steel Furnace Co., The, Chicago 6, Ill.
Farquhar Furnace Co., The, Wilmington, Ohio.
Gary Steel Prod. Co., Gary, Ind.
General Automatic Prods., Corp., Baltimore, Md.
Grand Island Furnace & Supply Co., Grand Island, Nebr.
Gray Metal Prods. Inc., Rochester 3, N.Y.
Green Colonial Furnace Co., Des Moines, Iowa
Henry Furnace Co., Medina, Ohio
Home Furnace Co., Holland, Mich.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Jettronaire, Inc., Springdale, Pa.
Keith Furnace Co., Des Moines, Iowa
Lennox Furnace Co., Marshalltown, Iowa
Majestic Co., Inc., The, Huntington, Ind.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
Norwalk Airconditioning Corp., The, So. Norwalk, Conn.
Ohio Valley Hardware & Roofing Co., Evansville 2, Ind.
Olsen Mfg., Co., The C.A., Elyria, Ohio
Peerless Furnace & Fdry., Inc., Indianapolis, Ind.
Premier Furnace Co., Dowagiac, Mich.
Radiation Furnace Corp., Benton Harbor, Mich.
Rockwell Co., W.S., Fairfield, Conn.
Schecter Bros. Co., Philadelphia 22, Pa.
Steel City Furnace Corp., Springdale, Pa.
U.S. Register Co., Battle Creek, Mich.
Vectaire Mfg. Co., Melrose, Mass.
Williamson Heater Co., The, Cincinnati 9, Ohio
York-Shipley, Inc., York, Pa.

Screws

U.S. Register Co., Battle Creek, Mich.

Smoke Pipe

Acme Mfg. Co., Philadelphia 36, Pa.
Adelta Mfg. Co., Inc., Philadelphia 46, Pa.
Anchor Div., New Albany, Ind.
Berger Furnace Co., Pittsburgh 6, Pa.
Chandler Co., Cedar Rapids, Iowa
Clayton & Lambert Mfg. Co., Louisville 10, Ky.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Corbman Bros., Inc., Philadelphia, Pa.
Excelsior Steel Furnace Co., The, Chicago 6, Ill.
Farquhar Furnace Co., The, Wilmington, Ohio
Gary Steel Prod. Co., Gary, Ind.
Grand Island Furnace & Supply Co., Grand Island, Nebr.
Gray Metal Prod. Inc., Rochester 3, N.Y.
Green Colonial Furnace Co., Des Moines, Iowa
Home Furnace Co., Holland, Mich.
Jettronaire, Inc., Springdale, Pa.
Keith Furnace Co., Des Moines, Iowa
Lennox Furnace Co., Marshalltown, Iowa

Majestic Co., Inc., The, Huntington, Ind.
Mueller Furnace Co., L.J., Milwaukee 15, Wisc.
Ohio Valley Hardware & Roofing Co., Evansville, Ind.
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Steel City Furnace Corp., Springdale, Pa.
Thermo-Prods., Inc., North Judson, Ind.
U.S. Register Co., Battle Creek, Mich.
Williamson Heater Co., The, Cincinnati 9, Ohio

Fans and Blowers

Attic Cooling

Air Controls, Inc., Cleveland, Ohio
American Blower Corp., Dearborn, Mich.
American Coolair Corp., Jacksonville, Fla.
Buffalo Forge Co., Buffalo, N.Y.
Emerson Electric Mfg. Co., The, St. Louis 21, Mo.
General Blower Co., Morton Grove, Ill.
Lau Blower Co., The, Dayton 7, Ohio
Martin Fan & Blower Co., Inc., Chicago 50, Ill.
Peerless Electric Co., The, Warren, Ohio
Torrington Mfg. Co., The, Torrington, Conn.
Viking Air Conditioning Corp., Cleveland 2, Ohio
Zink Co., John, Tulsa, Okla.

Draft Booster

Breese Burners, Inc., Santa Fe, N.M.

Duct

Brumme Mfg. Co., Bloomington, Ill.
Buffalo Forge Co., Buffalo, N.Y.
Flexible Tubing Corp., Guilford, Conn. (Fabric coated)
Grand Island Furnace & Supply Co., Grand Island, Nebr.
McLarty Systems, Battle Creek, Mich.
Martin Fan & Blower Co., Inc., Chicago 50, Ill.
New Aire Blower Co., Inc., Royal Oak, Mich.
Norwalk Air Conditioning Corp., The, So. Norwalk, Conn.
Radex Corp., Chicago 14, Ill.
Trane Co., The, LaCrosse, Wisc.
Wing Mfg. Co., L. J., Linden, N.J.

Heat Extractors

Lepick Heater Co., Seattle 4, Wash.

Induced Draft

American Blower Corp., Dearborn, Mich.
American Fdry. & Furnace Co., Bloomington, Ill.
Brumme Mfg. Co., Bloomington, Ill.
Buffalo Forge Co., Buffalo, N.Y.
Clarage Fan Co., Kalamazoo, Mich.
Eclipse Fuel Eng. Co., Rockford, Ill.
General Blower Co., Morton Grove, Ill.
Kisco Boiler & Eng. Co., St. Louis 4, Mo.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
Martin Fan & Blower Co., Inc., Chicago 50, Ill.
National Fuel Conservation Co., Inc., White Plains, N.Y.
Quickdraft Co., Canton 3, Ohio
Quiet Automatic Burner Corp., Newark 4, N.J.
Therm Gas Generator Co., Inc., Seattle, Wash.
Tjernlund Mfg. Co., St. Paul 14, Minn.
Viking Mfg. Corp., Cleveland, Ohio
Sturtevant Div., Boston 36, Mass.
Wing Mfg. Co., L. J., Linden, N.J.

Oil Burner, Air Impellers

Cary Mfg. Co., Waupaca, Wisc.
General Blower Co., Morton Grove, Ill.
Jan-Air, Inc., Richmond, Ill.
Lau Blower Co., The, Dayton 7, Ohio
Mechanical Prods. Co., Seattle 4, Wash.
Revcor, Chicago 30, Ill.
Simplex Oil Heating Corp., Philadelphia 11, Pa.
Torrington Mfg. Co., The, Torrington, Conn.

Warm Air Heating

Air Controls, Inc., Cleveland, Ohio
Airborne Industries, Inc., Minneapolis 11, Minn.
American Fdry. & Furnace Co., Bloomington, Ill.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Auburn Burner Co., Auburn, Ind.
Bard Mfg. Co., Bryan, Ohio
Bayley Blower Co., Milwaukee 14, Wisc.
Berger Furnace Co., Pittsburgh 6, Pa.
Bishop & Babcock Mfg. Co., Cleveland 14, Ohio
Brundage Co., Kalamazoo, Mich.
Buffalo Forge Co., Buffalo, N.Y.
Campbell Heating Co., Des Moines 17, Ia.
Cary Mfg. Co., Waupaca, Wisc.
Clarage Fan Co., Kalamazoo, Mich.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Corlett-Turner, Chicago 24, Ill.
Dowagiac Steel Furnace Co., 109 Beeson Street, Dowagiac, Mich.
Front Rank Mfg. Co., St. Louis 4, Mo.
Furblo Co., Hermansville, Mich.
General Blower Co., Morton Grove, Ill.
General Heating Prods. Co., Philadelphia, Pa.
International Oil Burner Co., St. Louis 10, Mo.
Lennox Furnace Co., Marshalltown, Iowa
Martin Fan & Blower Co., Inc., Chicago 50, Ill.
Mueller Furnace Co, L. J., Milwaukee 15, Wisc.
Niagara Furnace Div., Cleveland 13, Ohio
Peerless Electric Co., The, Warren, Ohio
Premier Furnace Co., Dowagiac, Mich.
Radex Corp., Chicago 14, Ill.
Revcor, Chicago 30, Ill.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Standard Heating Eqpt. Co., Waterloo, Iowa
Tjernlund Mfg. Co., St. Paul 14, Minn.
Torrington Mfg. Co., The, Torrington, Conn.
U.S. Air Conditioning Corp., Minneapolis 14, Minn.
Universal Electric Co., Owosso, Mich.
Western Blower Co., Seattle 4, Wash.
Wing Mfg. Co., L. J., Linden, N.J.

Filters, Strainers

Air, Cleanable

Air-Maze Corp., Cleveland 28, Ohio
American Air Filter Co., Inc., Louisville, Ky.
Maid-O-Mist, Inc., Chicago 41, Ill.
Research Prods. Corp., Madison 10, Wisc.
Sarco Co., Inc., New York 1, N.Y.

Air, Electrostatic

Air-Maze Corp., Cleveland 28, Ohio
American Air Filter Co, Inc., Louisville, Ky.
Radex Corp., Chicago 14, Ill.
Trion, Inc., McKees Rocks, Pa.
Sturtevant Div., Boston 36, Mass.

Air, Renewable

American Air Filter Co., Inc., Louisville, Ky.
Cuno Eng. Corp., Meriden, Conn.
Research Prods. Corp., Madison 10, Wisc.

Air, Non-Renewable

Air-Maze Corp., Cleveland 28, Ohio
American Air Filter Co., Inc., Louisville, Ky.
Bowser, Inc., Fort Wayne, Ind.
Cuno Eng. Corp., Meriden, Conn.
Drico Industrial Corp., New York 1, N.Y.
Glasfloss Div., New York 17, N.Y.
Harvey, Inc., Sid, Valley Stream, N.Y.
Owens-Corning Fiberglas Corp., Toledo 1, Ohio
Research Prods. Corp., Madison 10, Wisc.
Universal Air Filter Corp., Duluth 2, Minn.
Wilson & Co., Inc., Chicago 9, Ill.

Feed or Boiler Water

Bowser, Inc., Fort Wayne, Ind.
Commercial Filters Corp., Melrose 76, Mass.
Cuno Eng. Corp., Meriden, Conn.
General Controls Co., Glendale 1, Calif.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Kraissl Co., The, Hackensack, N.J.
Staples & Pfeiffer, San Francisco 7, Calif.
Sterling, Inc., Milwaukee 12, Wisc.
Stewart Oil Burner Co., Hanover, Pa.

Oil, Cartridge

Anderson Brass Co., Detroit 8, Mich.
Bowser, Inc., Fort Wayne, Ind.
Commercial Filters Corp., Melrose 76, Mass.
Cuno Eng. Corp., Meriden, Conn.
Eclipse Fuel Eng. Co., Rockford, Ill.
Fram Corp., Providence 16, R.I.
General Filters, Inc., Detroit 23, Mich.
Harvey, Inc., Sid, Valley Stream, N.Y.
Marietta Metal Prods. Corp., Marietta, Pa.
Morse-Smith-Morse Co., Watertown, Mass.
Pilgrim Oil Burner Co., Hartford, Conn.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Rega Mfg. Co., Rochester 20, N.Y.

Oil, Kits with Tank Valve

Anderson Brass Co., Detroit 8, Mich.
Eddington Metal Specialty Co, Eddington, Pa.

Oil, Metal Mesh

A-P Controls Corp., Milwaukee, Wisc.
Air-Maze Corp., Cleveland 28, Ohio

FILTERS, STRAINERS

Anthony Co., Long Island City 1, N.Y.
Bowser, Inc., Fort Wayne, Ind.
Eddington Metal Specialty Co., Eddington, Pa.
General Controls Co., Glendale 1, Calif.
Hemmel Oil Burning Eqpt. Co., Providence, R.I.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Kraissl Co., The, Hackensack, N.J.
Marvel Eng. Co, Chicago, Ill.
Monarch Mfg. Works, Inc., Philadelphia 34, Pa.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Sarco Co., Inc., New York 1, N.Y.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Smith Corp., A. O., Los Angeles 22, Calif.
Staples & Pfeiffer, San Francisco 7, Calif.
Sterling, Inc., Milwaukee 12, Wisc.
Stewart Oil Burner Co., Hanover, Pa.
Wilgus Mfg. Co., Los Angeles 21, Calif.

Oil, Metal Slot

Bowser, Inc., Ft. Wayne, Ind.
Cuno Eng. Corp., Meriden, Conn.
Delavan Mfg. Co., W. Des Moines, Iowa
Sarco Co., Inc., New York 1, N.Y.

Oil, Throw-Away

Bowser, Inc., Ft. Wayne, Ind.
Eddington Metal Specialty Co., Eddington, Pa.
Marquart Mfg. Co., Oakland, Calif.
Purolator Prods., Inc., Rahway, N.J.
Sparkler Fueloil Filters, Mundelin, Ill.

Strainers, #5, #6 Oil

Ace Eng. Co., Chicago 8, Ill.
Anderson Co., V. D., Cleveland 2, Ohio
Anthony Co., Long Island City 1, N.Y.
Bowser, Inc., Ft. Wayne, Ind.
Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Clark Mfg. Co., Cleveland 14, Ohio
Cuno Eng. Corp., Meriden, Conn.
Eclipse Fuel Eng. Co., Rockford, Ill.
Eddington Metal Specialty Co., Eddington, Pa.
Ellcon Co., The, New York 7, N.Y.
General Controls Co., Glendale 1, Calif.
General Filters, Inc., Detroit 23, Mich.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Kraissl Co., The, Hackensack, N.J.
Mueller Steam Specialty Co., Inc., Long Island City 1, N.Y.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Purolator Prods., Inc., Rahway, N.J.
Ray Oil Burner Co., San Francisco 12, Calif.
Sarco Co., Inc., New York 1, N.Y.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Staples & Pfeiffer, San Francisco 7, Calif.
Wilgus Mfg. Co., Los Angeles 21, Calif.
Wooley Co., E. L., Pawtucket, R.I.

Strainers, Bulk Plant

Anderson Co., V. D., Cleveland 2, Ohio
Anthony Co., Long Island City 1, N.Y.
Bowser, Inc., Ft. Wayne, Ind.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Cash Valve Mfg. Co., A. W., Decatur, Ill.
Clark Mfg. Co., Cleveland 14, Ohio
Cuno Eng. Corp., Meriden, Conn.
Erie Meter Systems, Inc., Erie, Pa.
General Filters, Inc., Detroit 23, Mich.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Kraissl Co., The, Hackensack, N.J.
Mueller Steam Specialty Co., Inc., Long Island City 1, N.Y.
Purolator Prods., Inc., Rahway, N.J.
Sarco Co., Inc., New York 1, N.Y.
Smith Corp., A. O., Los Angeles 22, Calif.
Staples & Pfeiffer, San Francisco 7, Calif.
Warner Lewis Co., Tulsa 8, Okla.

Fire Fighting Equipment

American-LaFrance-Foamite Corp., Elmira, N.Y.
Pyrene Mfg. Co., Newark 8, N.J.

Fittings

Boiler

Bell & Gossett Co., Morton Grove, Ill.
Carlton Oil Burner Co., Hartford 3, Conn.
Crane Co., Chicago 40, Ill.
Grinnell Co., Inc., Providence 1, R.I.

Duct

Acme Mfg. Co., Philadelphia 36, Pa.
Adelta Mfg. Co., Inc., Philadelphia, Pa.
Anchor Div., New Albany, Ind.
Berger & Furnace Co., Pittsburgh 6, Pa.
Buckeye Furnace Pipe Co., Columbus, Ohio
Chandler Co., Cedar Rapids, Ia.
Char-Gale Mfg. Co., Minneapolis, Minn.
Excelsion Steel Furnace Co., The, Chicago 6, Ill.
Flexible Tubing Corp., Guilford, Conn. (Coated Fabric)
Gary Steel Prod. Co., Gary, Ind.
Johns-Manville Corp., New York 16, N.Y.
Rockwell Co., W. S., Fairfield, Conn.

Fill and Vent

Bell & Gossett Co., Morton Grove, Ill.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
Plastic Appliance Co., Philadelphia 31, Pa.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Remco Inc., Baltimore, Md.
Rhode Island Fittings Co., Providence, R.I.
Sicard & Paul, Minneapolis 8, Minn.
Universal Valve Co., Elizabeth, N.J.

Hose

Buckeye Iron & Brass Works, Dayton 1, Ohio
Morris Coupling & Clamp Co., Elwood City, Pa.
Scovill Mfg. Co., Waterbury 20, Conn.
Span Brass Mfg. Co., Inc., Ostego, Mich.
Weatherhead Co., The, Cleveland 8, Ohio

Pipe

Anderson Brass Co., Detroit 8, Mich.
Barco Mfg. Co., Barrington, Ill.
C-S Brass Mfg. Co., New York 23, N.Y.
Chase Brass & Copper Co., Waterbury 20, Conn.
Couplings Co., Chicago 16, Ill.
Crane Co., Chicago 40, Ill.
Excelsior Steel Furnace Co., The, Chicago 6, Ill.
General Fittings Co., Providence 5, R.I.
Grinnell Co., Inc., Providence 1, R.I.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Johns-Manville Corp., New York 16, N.Y.
Madden Brass Prod. Co., Chicago 19, Ill. (Brass)
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Span Brass Mfg. Co., Inc., Otsego, Mich.
Universal Brass Corp., Arlington, N.J.
Weatherhead Co., The, Cleveland 8, Ohio

Tank

Buckeye Iron & Brass Works, Dayton 1, Ohio
C-S Brass Mfg. Co., New York 23, N.Y.
Grinnell Co., Inc., Providence 1, R.I.
McDonald Mfg. Co., A. Y., Dubuque, Iowa
Me. Gauge Co., East Haven, Conn.
Morrison Bros., Dubuque, Iowa
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Span Brass Mfg. Co., Inc., Otsego, Mich.
Therm Gas Generator Co., Inc., Seattle, Wash.
Universal Brass Corp., Arlington, N.J.
Universal Valve Co., Elizabeth, N.J.

Tubing, Compression

American Brass Co., Waterbury 20, Conn.
American Mfg. Co., Inc., Hartford, Conn.
Anderson Brass Co., Detroit 8, Mich.
C-S Brass Mfg. Co., New York 23, N.Y.
Carlton Oil Burner Co., Hartford 3, Conn.
Chase Brass & Copper Co., Waterbury 20, Conn.
Couplings Co., Chicago 16, Ill.
Grinnell Co., Inc., Providence 1, R.I.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Leggitt Co., S. H., Marshall, Mich.
Madden Brass Prod. Co., Chicago 19, Ill.
Pilgrim Oil Burner Co., Hartford, Conn.
Reading Brass Co., Hillsdale, Mich.
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Rockford Brass Works, Rockford, Ill.
Schoenberger Co., The W. J., Cleveland 5, Ohio
Scovill Mfg. Co., Waterbury 20, Conn.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Therm Gas Generator Co., Inc., Seattle, Wash.
Universal Brass Corp., Arlington, N.J.
Universal Valve Co., Elizabeth, N.J.
Wayne Brass Co., Inc., Fort Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio

Tubing, Flare

American Brass Co., Waterbury 20, Conn.
American Mfg. Co., Inc., Hartford, Conn.
Anderson Brass Co., Detroit 8, Mich.
Barridon Oil Burner Corp., Hartford, Conn.
C-S Brass Mfg. Co., New York 23, N.Y.
Carlton Oil Burner Co., Hartford 3, Conn.

Chase Brass & Copper Co., Waterbury 20, Conn.
Couplings Co., Chicago 16, Ill.
Grinnell Co., Inc., Providence 1, R.I.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Leggitt Co., S.H., Marshall, Mich.
Madden Brass Prod. Co., Chicago 19, Ill.
Pilgrim Oil Burner Co., Hartford, Conn.
Reading Brass Co., Hillsdale, Mich.
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Remco Inc., Baltimore, Md.
Rockford Brass Works, Rockford, Ill.
Schoenberger Co., The W. J., Cleveland 5, Ohio
Span Brass Mfg. Co., Inc., Otsego, Mich.
Therm Gas Generator Co., Inc., Seattle, Wash.
Universal Brass Corp., Arlington, N.J.
Wayne Brass Co., Inc., Fort Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio

Tubing, Sweat

American Brass Co., Waterbury 20, Conn.
Chase Brass & Copper Co., Waterbury 20, Conn.
Crane Co., Chicago 40, Ill.
General Fittings Co., Providence 5, R.I.
Grinnell Co., Providence 1, R.I.
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Rockford Brass Works, Rockford, Ill.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Wayne Brass Co., Inc., Fort Wayne, Ind.

Furnaces

Commercial

Altherm, Inc., New York 21, N.Y.
American Fdry. & Furnace Co., Bloomington, Ill.
Anchor Div., New Albany, Ind.
Andrews Htg. Co., Minneapolis 14, Minn.
Arcweld Mfg. Co., Inc., Seattle 99, Wash.
Armstrong Furnace Co., Columbus 12, Ohio
Barton Prods. Inc., Wheaton, Ill.
Beck Eng. Combustion Ko., St. Louis 6, Mo.
Besser Metal Prods. Corp., Charlotte, N.C.
Billow Corp., Chicago 6, Ill.
Bryant Heater Div., Cleveland, Ohio
Campbell Co., E. K., Kansas City, Mo.
Campbell Heating Co., Des Moines 17, Iowa
Cary Mfg. Co., Waupaca, Wisc.
Century Eng. Corp., Cedar Rapids, Iowa
Chandler Co., Cedar Rapids, Iowa
Chicago Steel Furnace Co., Chicago 17, Ill.
Chimney Furnace Co., Rockville, Md.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Cox Mfg. Co., Ridgeville, Ind.
Delta Htg. Corp., Trenton 8, N.J.
Domestic Mfg. Co., Seattle, Wash.
Dravo Corp., Pittsburgh 22, Pa.
Dualtron Co., The, Pittsburgh 29, Pa.
Eclipse Fuel Eng. Co., Rockford, Ill.
Floral City Heater Co., Monroe, Mich.
Gross-Aire Mfg. Co., Overland 14, Mo.
Heat Controller, Inc., Manitou Beach, Mich.
Henry Furnace Co., Medina, Ohio
Jackson & Church Co., Saginaw, Mich.
Johnson Heater Corp., Chelsea, Mass.
Lee Corp., Wilmington, Del.
Lennox Furnace Co., Marshalltown, Iowa
Majestic Co., Inc., The, Huntington, Ind.
Meyer Furnace Co., Peoria 2, Ill.
Mueller Furnace Co., L. J. Milwaukee 15, Wisc.
National Heater Co., Inc., St. Paul 4, Minn.
Norwalk Airconditioning Corp., The, So. Norwalk, Conn.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Parks-Cramer Co., Fitchburg, Mass.
Premier Furnace Co., Dowagiac, Mich.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Rockwell Co., W. S., Fairfield, Conn.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Sandberg Mfg. Co., Portland 10, Ore.
Stewart Oil Burner Co., Hanover, Pa.
Tjernlund Mfg. Co., St. Paul 14, Minn.
U.S. Machine Div., Lebanon, Ind.
U.S. Rad. Corp., Detroit 26, Mich.
Waterman-Waterbury Co., The, Minneapolis 13, Minn.
Weatherall Eng. Inc., Providence, R.I.

Domestic Coal (to 200,000 Btu)

American Fdry. & Furnace Co., Bloomington, Ill.
American Furnace Co., St. Louis 10, Mo.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anchor Div., New Albany, Ind.
Armstrong Furnace Co., Columbus 12, Ohio
Auburn Fdry., Inc., Auburn, Ind.
Bard Mfg. Co., Bryan, Ohio
Beck Eng. Combustion Ko., St. Louis 6, Mo.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Campbell Heating Co., Des Moines 17, Iowa
Chandler Co., Cedar Rapids, Iowa
Combustioneer Div., Springfield, Ohio
Connelley Co., St. Louis 3, Mo.
Crane Co., Chicago 40, Ill.
Dowagiac Steel Furnace Co., Dowagiac, Mich.
Ex Cel Co., Dowagiac, Mich.
Farquhar Furnace Co., The, Wilmington, Ohio
Floral City Heater Co., Monroe, Mich.
Forest City Foundries Co., The, Cleveland 13, Ohio
Front Rank Mfg. Co., St. Louis 4, Mo.
General Machine Co., Inc., Emmaus, Pa.
Green Colonial Furnace Co., Des Moines, Iowa
Gross-Aire Mfg. Co., Oveland 14, Mo.
Henry Furnace Co., Medina, Conn.
Hess Co., The, Chicago 50, Ill.
Holland Furnace Co., Holland, Mich.
Home Furnace Co., Holland, Mich.
Home Furnace & Fdry. Co., Coldwater, Mich.
Illinois Iron & Bolt Co., Carpentersville, Ill.
International Heater Co., Utica, N.Y.
Jackson & Church Co., Saginaw, Mich.
Keith Furnace Co., Des Moines, Iowa
Lennox Furnace Co., Marshalltown, Iowa
Majestic Co., Inc., The, Huntington, Ind.
Meyer Furnace Co., Peoria 2, Ill.
Montag Stove & Furnace Works, Portland 17, Ore.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Niagara Furnace Div., Cleveland 13, Ohio
Norge Heat Div., Kalamazoo, Mich.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Premier Furnace Co., Dowagiac, Mich.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Rybolt Heater Co., The, Ashland, Ohio
Sandberg Mfg. Co., Portland, Ore.
Schill Mfg. Co., The, Crestline, Ohio
Stewart Oil Burner Co., Hanover, Pa.
Thatcher Furnace Co., Garwood, N.J.
Toridheet Div., Cleveland 2, Ohio
U.S. Machine Div., Lebanon, Ind.
U.S. Rad. Corp., Detroit 26, Mich.
Waterman-Waterbury Co., The, Minneapolis 13, Minn.
Wayne Home Eqpt. Co. Inc., Fort Wayne 4, Ind.
Williamson Heater Co., The, Cincinnati 9, Ohio

Domestic Gas (to 200,000 Btu)

Acme Heating Div., W. Hartford 10, Conn.
Airflame, Inc., Waukegan, Ill.
Airtemp Div., Dayton 1, Ohio
Airwasher Corp., Eaton Rapids, Mich.
Altherm, Inc., New York 21, N.Y.
American Fdry. & Furnace Co., Bloomington, Ill.
American Furnace Co., St. Louis 10, Mo.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anchor Div., New Albany, Ind.
Armstrong Furnace Co., Columbus 12, Ohio
Auburn Fdry., Inc., Auburn, Ind.
Automatic Firing Corp., St. Louis, Mo.
Bard Mfg. Co., Bryan, Ohio
Barton Products, Inc., Wheaton, Ill.
Beck Eng. Combustion Co., St. Louis 6, Mo.
Berger Furnace Co., Pittsburgh 6, Pa.
Besser Metal Prods. Corp., Charlotte, N.C.
Brandenburg Industries, Inc., Baltimore 9, Md.
Bryant Air Conditioning Corp., Philadelphia 23, Pa.
Bryant Heater Div., Cleveland, Ohio
Campbell Heating Co., Des Moines 17, Iowa
Century Eng. Corp., Cedar Rapids, Iowa
Chandler Co., Cedar Rapids, Iowa
Chicago Steel Furnace Co, Chicago 17, Ill.
Chimney Furnace Co., Rockville, Md.
Coleman Co., Inc., Wichita, Kan.
Combustioneer Div., Springfield, Ohio
Conco Eng. Works, Mendota, Ill.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connellley Co., St. Louis 3, Mo.
Cox Mfg. Co., Ridgeville, Ind.
Crane Co., Chicago 40, Ill.
Delco Appliance Div., Rochester, N.Y.
Delta Heating Corp., Trenton 8, N.J.
Dowagiac Steel Furnace Co., Dowagiac, Mich.
Daultron Co., The, Pittsburgh 29, Pa.

FURNACES

Ducane Heating Corp., Lincoln Park, N.J.
Ex Cel Co., Dowagiac, Mich.
Farquhar Furnace Co., The, Wilmington, Ohio
Firewel Co., Inc., The, Buffalo 25, N.Y.
Floral City Heater Co., Monroe, Mich.
Forest City Foundries Co., The, Cleveland 13, Ohio
Front Rank Mfg. Co., St. Louis 4, Mo.
Furblo Co., Hermansville, Mich.
General Electric Co., Bloomfield, N.J.
Gillen Co., J. L., Detroit 28, Mich.
Green Colonial Furnace Co., Des Moines, Iowa
Gross-Aire Mfg. Co., Overland 14, Mo.
Heat Controller, Inc., Manitou Beach, Mich.
Heating Specialties, Inc., Baltimore 29, Md.
Heil Co., The, Milwaukee 1, Wisc.
Henry Furnace Co., Medina, Ohio
Hess Co., The, Chicago 50, Ill.
Holland Furnace Co., Holland, Mich.
Home Furnace & Fdry. Co., Coldwater, Mich.
Illinois Iron & Bolt Co., Carpentersville, Ill.
International Heater Co., Utica, N.Y.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Jackson & Church Co., Saginaw, Mich.
Jettronaire, Inc., Springdale, Pa.
Johnson Heater Corp., Chelsea, Mass.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Lennox Furnace Co., Marshalltown, Iowa
Little Burner Co., Inc., H. C., San Rafael, Calif.
Luty Furnace Mfg. Co., Detroit 21, Mich.
Majestic Co., Inc., The, Huntington, Ind.
Marietta Metal Prods. Corp., Marietta, Pa.
Mayflower Air-Conditioners, Inc., St. Paul 6, Minn.
Meyer Furnace Co., Peoria 2, Ill.
Morrison Steel Prods. Inc., Buffalo 7, N.Y.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Niagara Furnace Div., Cleveland 13, Ohio
Norge Heat Div., Kalamazoo, Mich.
Norman Prods. Co., Columbus, Ohio
Norwalk Airconditioning Corp., The, So. Norwalk, Conn.
O'Halloran Industries, Detroit 4, Mich.
Olsen Mfg. Co., The C. A., Elyria, Ohio.
Patten Co., J. V., Sycamore, Ill.
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Pennsylvania Furnace & Iron Co., Warren, Pa.
Premier Furnace Co., Dowagiac, Mich.
Rheem Mfg. Co., Chicago 29, Ill.
Richmond Rad. Co., New York 17, N.Y.
Roberts-Gordon Appliance Corp., Buffalo 6, N.Y.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Rybolt Heater Co., The, Ashland, Ohio
Schill Mfg. Co., The, Crestline, Ohio
Silent Automatic Prods., Jackson, Mich.
Steel City Furnace Corp., Springdale, Pa.
Stewart Oil Burner Co., Hanover, Pa.
Surface Combustion Corp., Toledo 1, Ohio
Thatcher Furnace Co, Garwood, N.J.
Timken Silent Automatic Div., Jackson, Mich.
Tjernlund Mfg. Co., St. Paul 14, Minn.
Toridheet Div., Cleveland 2, Ohio
Turb-O-Tube Furnace, Inc., Buffalo 13, N.Y.
U.S. Machine Div., Lebanon, Ind.
U. S. Rad. Corp., Detroit 26, Mich.
Viking Mfg. Corp., Cleveland, Ohio
Waterman-Waterbury Co., The, Minneapolis 13, Minn.
Wayne Home Eqpt. Co., Inc., Fort Wayne 4, Ind.
Weatherall Eng. Inc., Providence, R.I.
Williams Automatic, Inc., White Plains, N.Y.
Williams Div., Bloomington, Ill.
Williamson Heater Co., The, Cincinnati 9, Ohio.
York-Shipley, Inc., York, Pa.
Zink Co., John, Tulsa, Okla.

Domestic Oil (to 200,000 Btu)

Acme Heating Div., W. Hartford 10, Conn.
Air Conditioning Eng. Co., Cambridge 41, Mass.
Aire Director Mfg. Co., Seattle 9, Wash.
Airflame, Inc., Waukegan, Ill.
Airtemp Div., Dayton 1, Ohio
Airwasher Corp., Eaton Rapids, Mich.
Altherm, Inc., New York 21, N.Y.
American Fdry. & Furnace Co., Bloomington, Ill.
American Furnace Co., St. Louis 10, Mo.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anchor Div., New Albany, Ind.
Arcweld Mfg. Co., Inc., Seattle 99, Wash.
Armstrong Furnace Co., Columbus 12, Ohio
Auburn Burner Co., Auburn, Ind.
Auburn Fdry., Auburn, Ind.
Automatic Firing Corp., St. Louis, Mo.
Bard Mfg. Co., Bryan, Ohio
Barton Products, Inc., Wheaton, Ill.
Beck Eng. Combustion Ko., St. Louis 6, Mo.
Berger Furnace Co., Pittsburgh 6, Pa.
Besser Metal Products Corp., Charlotte, N.C.
Beyer Oil Burner Co., Rosamond, Calif.
Bovee Furnace Works, Waterloo, Iowa.
Brandenberg Industries, Inc., Baltimore 9, Md.
Brandes Co., Madison 4, Wisc.
Brown Steel Tank Co., Minneapolis 14, Minn.
Bryant Air Conditiong Corp., Philadelphia 23, Pa.
Bryant Corp., C. L., Cleveland 3, Ohio
Bryant Heater Div., Cleveland, Ohio
Campbell Heating Co., Des Moines 17, Iowa
Cary Mfg. Co., Waupaca, Wisc.
Century Eng. Corp., Cedar Rapids, Iowa
Certified Furnace Co., St. Paul 4, Minn.
Chandler Co., Cedar Rapids, Iowa
Charter Oak Stove & Range Co., St. Louis 15, Mo.
Chicago Steel Furnace Co., Chicago 17, Ill.
Chimney Furnace Co., Rockville, Md.
Coleman Co., Inc., Wichita, Kan.
Combustioneer Div., Springfield, Ohio
Conco Eng. Works, Mendota, Ill.
Conn. State Furnace Co., Inc.. Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Coroaire Heater Corp., Cleveland 15, Ohio
Cox Mfg. Co., Ridgeville, Ind.
Crane Co., Chicago 40, Ill.
Delco Appliance Div., Rochester, N.Y.
Delta Heating Corp., Trenton 8, N.J.
Domestic Mfg. Co., Seattle, Wash.
Dornback Furnace & Fdry. Co., Cleveland 8, Ohio
Dowagiac Steel Furnace Co., Dowagiac, Mich.
Daultron Co., The, Pittsburgh 29, Pa.
Ducane Heating Corp., Lincoln Park, N.J.
Electro-Watt Industries Inc., Salem, Ore.
Electro-Watt, Inc., Seattle 1, Wash.
Electrol Burner Mfg. Co. Inc., Rutherford, N.J.
Ex Cel Co., Dowagiac, Mich.
Farquhar Furnace Co., The, Wilmington, Ohio
Firewel Co., Inc., The, Buffalo 25, N.Y.
Floral City Heater Co., Monroe, Mich.
Forest City Foundries Co., The, Cleveland 13, Ohio
Front Rank Mfg. Co., St. Louis 4, Mo.
Furblo Co., Hermansville, Mich.
General Electric Co., Bloomfield, N.J.
General Heating Prods. Co., Philadelphia, Pa.
General Machine Co., Inc., Emmaus, Pa.
Gilbert & Barker Mfg. Co., West Springfield, Mass.
Gillen Co., J. L., Detroit 28, Mich.
Green Colonial Furnace Co., Des Moines, Iowa
Greene Mfg. Co., A., Philadelphia, Pa.
Gross-Aire Mfg. Co., Overland 14, Mo.
Hart Heat Div., Peoria, Ill.
Heat Controller, Inc., Manitou Beach, Mich.
Heating Specialties, Inc., Baltimore 29, Md.
Heatlox Furnace, Inc., Tacoma, Wash.
Heil Co., The, Milwaukee 1, Wisc.
Henry Furnace Co., Medina, Ohio
Hess Co., The, Chicago 50, Ill.
Hess-Snyder Co., The, Massillon, Ohio
Holland Furnace Co., Holland, Mich.
Home Furnace Co., Holland, Mich.
Home Furnace & Fdry. Co., Coldwater, Mich.
Illinois Iron & Bolt Co., Carpentersville, Ill.
International Heater Co., Utica, N.Y.
International Sales Co., San Francisco 24, Calif.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Jackson & Church Co., Saginaw, Mich.
Jettronaire, Inc., Springdale, Pa.
Johnson Heater Corp., Chelsea, Mass.
Johnson Co., S. T., Oakland, Calif.
Jungers Stove & Range Co., Grafton, Wisc.
Kaustine Co., Inc., Perry, N.Y.
Keith Furnace Co., Des Moines, Iowa
Kresky Mfg. Co., Inc., Petaluma, Calif.
Laco Oil Burner Co., Inc., Griswold, Iowa
La Salle Oil Burner Co., Inc., Seattle 3, Wash.
Lennox Furnace Co., Marshalltown, Iowa
Little Burner Co., Inc., H. C., San Rafael, Calif.
Livingston, Inc., Marshall, Mich.
Loxaire Corp., Tacoma, Wash.
Luty Furnace Mfg. Co., Detroit 21, Mich.
McKee Air Conditioning Co., Minneapolis 12, Minn.
Majestic Co., Inc., The, Huntington, Ind.
Marietta Metal Prods. Corp., Marietta, Pa.

Mayflower Air-Conditioners, Inc., St. Paul 6, Minn.
Mechanical Prods. Co., Seattle 4, Wash.
Metromatic Mfg. Co., Everett 49, Mass.
Meyer Furnace Co., Peoria 2, Ill.
Montag Stove & Furnace Works, Portland 17, Ore.
Morrison Steel Prods., Inc., Buffalo 7, N.Y.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Mulkey Co., J. F., Detroit 10, Mich.
Niagara Furnace Div., Cleveland 13, Ohio
Norge Heat, Div., Kalamazoo, Mich.
Norwalk Airconditioning Corp., The, So. Norwalk, Conn.
O'Halloran Industries, Detroit 4, Mich.
Oil Eqpt. Laboratories, Inc., Elizabeth, N.J.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Oneida Heater Co. Inc., Oneida, N.Y.
Patten Co., J. V., Sycamore, Ill.
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Perfection Stove Co., Cleveland 4, Ohio
Petrol Oil Burner Mfg. Co., Inc., Malden 48, Mass.
Premier Furnace Co., Dowagiac, Mich.
Prentiss Wabers Products Co., Wisconsin Rapids, Wisc.
Quick Furnace Co., Des Moines, Iowa
Quiet Automatic Burner Corp., Newark 4, N.J.
Radiant-Aire Corp., Michigan City, Ind.
Ray Oil Burner Co., San Francisco 12, Calif.
Rheem Mfg. Co., Chicago 29, Ill.
Richmond Radiator Co., New York 17, N.Y.
Richmond Radiator Co., New Castle, Del.
Rossoe Mfg. Co., Inc., Seattle, Wash.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Rybolt Heater Co., The, Ashland, Ohio
St. Louis Furnace Mfg. Co., St. Louis, Mo.
Sandberg Mfg. Co., Portland 10, Ore.
Schill Mfg. Co., The, Crestline, Ohio
Silent Automatic Prods., Jackson, Mich.
Silent Sioux Corp., Orange City, Iowa
Stainless Steel Prods. Co., St. Paul 4, Minn.
Steel City Furnace Corp., Springdale, Pa.
Stewart Oil Burner Co., Hanover, Pa.
Surface Combustion Corp., Toledo 1, Ohio
Syncromatic Corp., Watertown 9, Wisc.
Thatcher Furnace Co., Garwood, N.J.
Therm Gas Generator Co., Inc., Seattle, Wash.
Therom-Prods. Inc., North Judson, Ind.
Timken Silent Automatic Div., Jackson, Mich.
Tjernlund Mfg. Co., St. Paul 14, Minn.
Toridheet Div., Cleveland 2, Ohio
Tucker & Sons, Mfg., Tacoma 8, Wash.
Turb-O-Tube Furnace, Inc., Buffalo 13, N.Y.
XXth Century Heating & Ventilating Co., Akron 1, Ohio
U.S. Machine Div., Lebanon, Ind.
U.S. Radiator Corp., Detroit 26, Mich.
Utility Appliance Corp., Los Angeles 58, Calif.
Viking Mfg. Corp., Cleveland, Ohio
Volcano Burner Corp., New York 61, N.Y.
Waterman-Waterbury Co., The, Minneapolis 13, Minn.
Wayne Home Eqpt. Co. Inc., Fort Wayne 4, Ind.
Weatherall Eng. Inc., Providence, R.I.
Williams Automatic, Inc., White Plains, N.Y.
Williams Div., Bloomington, Ill.
Williamson Heater Co., The, Cincinnati 9, Ohio
York-Shipley, Inc., York, Pa.

Furnace—Burner Units

Ceiling, Suspended

Air Conditioning Eng. Co., Cambridge 41, Mass.
Altherm, Inc., New York 21, N.Y.
American Furnace Co., St. Louis 10, Mo.
American Ideal-Aire Corp., Mineola, N.Y.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anchor Div., New Albany, Ind.
Anchor Stove & Range Co., New Albany, Ind.
Armstrong Furnace Co., Columbus 12, Ohio
Auburn Burner Co., Auburn, Ind.
Auburn Fdry., Inc., Auburn, Ind.
Bard Mfg. Co., Bryan, Ohio
Besser Metal Prods. Corp., Charlotte, N.C.
Bryant Heater Div., Cleveland, Ohio
Century Eng. Corp., Cedar Rapids, Ia.
Chicago Steel Furnace Co., Chicago 17, Ill.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Crane Co., Chicago 40, Ill.
Delta Heating Corp., Trenton 8, N.J.
Domestic Mfg. Co., Seattle, Wash.
Dravo Corp., Pittsburgh 22, Pa.
Electro-Watt Industries, Inc., Salem, Oregon
Esso Standard Oil Co., New York 19, N.Y.
Fluid Heat Div., Baltimore, Md.
Front Rank Mfg. Co., St. Louis 4, Mo.
General Automatic Prod. Corp., Baltimore, Md.
Gilbert & Barker Mfg. Co., West Springfield, Mass.
Green Colonial Furnace Co., Des Moines, Iowa
Hall-Neal Furnace Co., Indianapolis, Ind.
Hart Heat Div., Peoria, Ill.
Harvey-Whipple, Inc., Springfield, Mass.
Henry Furnace Co., Medina, Ohio
International Heater Co., Utica, N.Y.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Jackson & Church Co., Saginaw, Mich.
Johnson Heater Corp., Chelsea, Mass.
Kleer Kleen Mfg. Co., Oakland, Calif.
Ko-Z-Aire Prods., Inc., Red Oak, Iowa
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Lennox Furnace Co., Marshalltown, Iowa
Little Burner Co., Inc., H. C., San Rafael, Calif.
Mechanical Products Co., Seattle 4, Wash.
Metrol Oil Burner Mfg. Co., Inc., Easthampton, Mass.
Meyer Furnace Co., Peoria 2, Ill.
Montag Stove & Furnace Works, Portland, Ore.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
National Heater Co., Inc., St. Paul 4, Minn.
Norge Heat Div., Kalamazoo, Mich.
Norman Prods. Co., Columbus, Ohio
Northwest Fdry. & Furnace Co., Portland 2, Ore.
Norwalk Airconditioning Corp., The, So. Norwalk, Conn.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Over Head Heaters, Inc., Detroit 26, Mich.
Pacific Oil Co., Fall River, Mass.
Peerless Furnace & Fdry., Inc., Indianapolis, Ind.
Perfection Stove Co., Cleveland 4, Ohio
Prentiss Waber Prods. Co., Wisconsin Rapids, Wisc.
Quiet Automatic Burner Corp., Newark 4, N.J.
Red Triangle Heater Co., Wausau, Wisc.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Rossoe Mfg. Co., Inc., Seattle, Wash.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
The Rybolt Heater Co., Ashland, Ohio
Sandberg Mfg. Co., Portland 10, Oreg.
Standard Arcoil Corp., Newark 8, N.J.
Tjernlund Mfg. Co., St. Paul 14, Minn.
U.S. Rad. Corp., Detroit 26, Mich.
Viking Mfg. Corp., Cleveland 14, Ohio
Viking Oil Co., Milwaukee, Wisc.
Volcano Burner Corp., New York 61, N.Y.
Waterman-Waterbury Co., Minneapolis, Minn.
Wayne Home Eqpt. Co., Inc., Ft. Wayne, Ind.
Weatherall Eng. Inc., Providence, R.I.
Williams Div., Bloomington, Ill.
York-Shipley, Inc., York, Pa.

Floor Furnaces

(See listing on page 31d under Space Heaters, Oilfired, Floor Furnaces)

Forced Air, Atomizing Vertical Rotary

Marietta Metal Prods. Corp., Marietta, Pa.

Forced Air, High Pressure Burner

Acme Heating Div., W. Hartford 10, Conn.
Air Conditioning Eng. Co., Cambridge 41, Mass.
Aire Director Mfg. Co., Seattle 9, Wash.
Airflame, Inc., Waukegan, Ill.
Airtemp Div., Dayton 1, Ohio
Airtherm Mfg. Co., St. Louis 10, Mo.
Alan Distributors, Inc., Worcester, Mass.
Altherm, Inc., New York 21, N.Y.
American Boiler & Fdry. Co., Milan, Mich.
American Fdry. & Furnace Co., Bloomington, Ill.
American Ideal-Aire Corp., Mineola, N.Y.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anchor Div., New Albany, Ind.
Anchor Stove & Range Co., New Albany, Ind.
Armstrong Furnace Co., Columbus 12, Ohio
Auburn Burner Co., Auburn, Ind.
Auburn Fdry., Inc., Auburn, Ind.
Auto Heat Corp., Middletown, Conn.
Automatic Firing Corp., St. Louis, Mo.
Bard Mfg. Co., Bryan, Ohio
Barton Products Inc., Wheaton, Ill.
Bascom Co., Inc., Geo. R., Dorchester 22, Mass.
Beaver Mfg. Co., Portland 4, Ore.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Berkley Mfg. Co., Philadelphia, Pa.
Besser Metal Products Corp., Charlotte, N.C.
Bethlehem Fdry. & Machine Co., Bethlehem, Pa.
Billow Corp., Chicago 6, Ill.

FURNACE—BURNER UNITS

Brandenburg Industries, Inc., Baltimore 9, Md.
Brandes Co., Madison 4, Wisc.
Brown Fintube Co., Elyria, Ohio
Bryant Air Conditioning Corp., Philadelphia 23, Pa.
Bryant Corp., C. L., Cleveland 3, Ohio
Bryant Heater Div., Cleveland, Ohio
Campbell Heating Co., Des Moines 17, Iowa
Cary Mfg. Co., Waupaca, Wisc.
Century Eng. Corp., Cedar Rapids, Iowa
Certified Furnace Co., St. Paul 4, Minn.
Chandler Co., Cedar Rapids, Iowa
Chicago Steel Furnace Co., Chicago 17, Ill.
Chimney Furnace Corp., Rockville, Md.
Coal-O-Matic Co., Trucksville, Pa.
Coleman Co., Inc., Wichita, Kan.
Combustioneer Div., Springfield, Ohio
Conco Eng. Works, Mendota, Ill.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Consolidated Industries, Inc., Lafayette, Ind.
Crane Co., Chicago 40, Ill.
Delco Appliance Div., Rochester, N.Y.
Delta Heating Corp., Trenton 8, N.J.
DeSoto Oil Burner Co., York, Pa.
Domestic Mfg. Co., Seattle, Wash.
Dowagiac Steel Furnace Co., Dowagiac, Mich.
Dravo Corp., Pittsburgh 22, Pa.
Eclipse Fuel Eng. Co., Rockford, Ill.
Electric Furnace-Man, Inc., Emmaus, Pa.
Electro-Watt Industries, Inc., Salem, Ore.
Electro-Watt, Inc., Seattle 1, Wash.
Electrol Burner Mfg. Co., Inc., Rutherford, N.J.
Esso Standard Oil Co., New York 19, N.Y.
ExCel Co., Dowagiac, Mich.
Excelsior Steel Furnace Co., Chicago, Ill.
Fageol Heat Machine Co., Detroit 11, Mich.
Farquhar Furniture Co., The, Wilmington, Ohio
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Fairchester Oil Co., Inc., Port Chester, N.Y.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Firewel Co., Inc., The, Buffalo 25, N.Y.
Fluid Heat Div., Baltimore 24, Md.
Front Rank Mfg. Co., St. Louis 4, Mo.
Forest City Foundries Co., The, Cleveland 13, Ohio
Front Rank Mfg. Co., St. Louis 4, Mo.
General Automatic Prods. Corp., Baltimore, Md.
General Heating Prods. Co., Philadelphia, Pa.
General Machine Co., Inc., Emmaus, Pa.
General Oil Heating Corp., W. New York, N.J.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Gillen Co., J. L., Detroit 28, Mich.
Green Colonial Furnace Co., Des Moines, Iowa
Greene Mfg. Co., A., Philadelphia, Pa.
Hall-Neal Furnace Co., Indianapolis, Ind.
Hart Heat Div., Peoria, Ill.
Harvey-Whipple, Inc., Springfield, Mass.
Heating Specialties, Inc., Baltimore 29, Md.
Heil Co., The, Milwaukee 1, Wisc.
Henry Furnace Co., Medina, Ohio
Herco Oil Burner Corp., Lancaster, Pa.
Hershey Machine & Fdry. Co., Manheim, Pa.
Hess Co., The, Chicago 50, Ill.
Henry Furnace Co., Medina, Ohio
Holland Furnace Co., Holland, Mich.
Home Furnace Co., Holland, Mich.
Illinois Iron & Bolt Co., Carpentersville, Ill.
International Heater Co., Utica, N.Y.
International Oil Burner Co., St. Louis 10, Mo.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Johnson Heater Corp., Chelsea, Mass.
Johnson Co., S. T., Oakland, Calif.
Kalamazoo Stove & Furnace Co., Kalamazoo, Mich.
Kaustine Co., Inc., Perry, N.Y.
Keith Furnace Co., Des Moines, Iowa
Ko-Z-Aire Prods., Inc., Red Oak, Iowa
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Laco Oil Burner Co., Inc., Griswold, Iowa
LaSalle Oil Burner Co., Inc., Seattle 3, Wash.
Leeson Air Conditioning Corp., Detroit 27, Mich.
Lennox Furnace Co., Marshalltown, Iowa
Livingston, Inc., Marshall, Mich.
Loxaire Corp., Tacoma, Wash.
Luty Furnace Mfg. Co., Detroit 21, Mich.
Lynch Co., Inc., The, Portland 11, Ore.
McKee Air Conditioning Co., Minneapolis 12, Minn.
McPherson Furnace & Supply Co., Portland 12, Ore.
Majestic Co., Inc., The, Huntington, Ind.
Major Oil Burner Co., Philadelphia 22, Pa.
Marietta Metal Prods. Corp., Marietta, Pa.
May Oil Burner Corp., Baltimore 30, Md.
Mayflower Air-Conditioners, Inc., St. Paul 6, Minn.
Metro Oil Burner Mfg. Co., Easthampton, Mass.
Metromatic Mfg. Co., Everett 49, Mass.
Meyer Furnace Co., Peoria 2, Ill.
Montag Stove & Furnace Works, Portland 17, Oreg.
Morrison Steel Prods., Inc., Buffalo 7, N.Y.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Mulkey Co., J. F., Detroit 10, Mich.
National Heater Co., Inc., St. Paul 4, Minn.
Niagara Furnace Div., Cleveland 13, Ohio
Norge Heat, Div., Kalamazoo, Mich.
Northwest Fdry. & Furnace Co., Portland 2, Ore.
Norwalk Air Conditioning Corp., The, So. Norwalk, Conn.
O'Halloran Industries, Detroit 4, Mich.
Oil-Elec-Tric Co., St. Paul 4, Minn.
Oil Eqpt. Laboratories, Inc., Elizabeth, N.J.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Pacific Oil Co., Fall River, Mass.
Paragon Oil Burner Corp., Brooklyn 22, N.Y.
Patten, Co., J. V., Sycamore, Ill.
Peabody Eng. Corp., New York 36, N.Y.
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Penn Boiler & Burner Mfg. Corp., Lancaster, Pa.
Perfection Stove Co., Cleveland 4, Ohio
Premier Furnace Co., Dowagiac, Mich.
Quick Furnace Co., Des Moines, Iowa
Quiet Automatic Burner Corp., Newark 4, N.J.
Radiant-Aire Corp., Michigan City, Ind.
Radiation Furnace Corp., Benton Harbor, Mich.
Radiant Utilities Corp., Brooklyn 14, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Rheem Mfg. Co., Chicago 29, Ill.
Robot Auto-Heat Corp., The, Middletown, Conn.
Rossoe Mfg. Co., Inc., Seattle, Wash.
Round Oak Co., Inc., of Indiana, Dowagiac, Mich.
Russo, Inc., Thomas D., Boston 31, Mass.
Sandberg Mfg. Co., Portland 10, Ore.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Schwab Safe Co., Lafayette, Ind.
Scott-Newcomb, Inc., St. Louis 19, Mo.
Sinclair Refining Co., New York, N.Y.
Standard Arcoil Corp., Newark 8, N.J.
Standard Heating Eqpt. Co., Waterloo, Iowa
Steel City Furnace Corp., Springdale, Pa.
Steel Prods., Inc., W. Haven, Conn.
Stewart Oil Burner Co., Hanover, Pa.
Stutzman Oil Burner Co., Clifton Heights, N.J.
Surface Combustion Corp., Toledo 1, Ohio
Syncromatic Corp., Watertown 9, Wisc.
Thatcher Furnace Co., Garwood, N.J.
Therm Gas Generator Co., Inc., Seattle, Wash.
Thermo-Prods., Inc., North Judson, Ind.
Tjernlund Mfg. Co., St. Paul 14, Minn.
Toridheet Div., Cleveland 2, Ohio
XXth Century Heating & Ventilating Co., Akron 1, Ohio
U.S. Machine Div., Lebanon, Ind.
U.S. Rad. Corp., Detroit 26, Mich.
Viking Oil Co., Milwaukee, Wisc.
Volcano Burner Corp., New York 61, N.Y.
Waltham Oil Burner Co., E. Boston, Mass.
Waterman-Waterbury Co., The, Minneapolis 13, Minn.
Wayne Home Eqpt. Co., Inc., Ft. Wayne 4, Ind.
Weatherall Eng. Inc., Providence, R.I.
West Coast Quiet Heet, Inc., Portland, Ore.
Williams Automatic, Inc., White Plains, N.Y.
Williams Div., Bloomington, Ill.
Williamson Heater Co., The, Cincinnati 9, Ohio
York-Shipley, Inc., York, Pa.
Zink Co., John, Tulsa, Okla.

Forced Air, High Pressure Burner with Built-in Water Heater

Metromatic Mfg. Co., Everett 49, Mass.

Forced Air, Low Pressure Burner

Acme Tank & Welding Div., W. Hartford 10, Conn.
Airflame, Inc., Waukegan, Ill.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Billow Corp., Chicago 6, Ill.
Brown Fintube Co., Elyria, Ohio
Bryant Heater Div., Cleveland, Ohio
Combustioneer Div., Springfield, Ohio
Domestic Mfg. Co., Seattle, Wash.
Dravo Corp., Pittsburgh 22, Pa.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
General Electric Co., Bloomfield, N.J.
Illinois Iron & Bolt Co., Carpenterville, Ill.

Johnson Heater Corp., Chelsea, Mass.
Lynch Co., Inc., The, Portland 11, Ore.
Marietta Metal Prods. Corp., Marietta, Pa.
National Heater Co., Inc., St. Paul 4, Minn.
O'Halloran Industries, Detroit 4, Mich.
Pacific Oil Co., Fall River, Mass.
Petrol Oil Burner Mfg. Co., Inc., Malden 48, Mass.
Republic Prods. Co., Philadelphia 36, Pa.
Richmond Rad. Co., New York 17, N.Y.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Scott-Newcomb, Inc., St. Louis 19, Mo.
Stutzman Oil Burner Co., Clifton Heights, N.J.
U.S. Machine Div., Lebanon, Ind.
Viking Mfg. Corp., Cleveland 14, Ohio
Weatherall Eng. Inc., Providence 4, R.I.
Williams Div., Bloomington, Ill.
Zink Co., John, Tulsa, Okla.

Forced Air, Vaporizing

Allied Htg. & Air Conditioning Co., Lawndale, Calif.
American Boiler & Fdry. Co., Milan, Mich.
Anchor Div., New Albany, Ind.
Bauer Oil Burner, Inc., Wilmington, Del.
Beyer Oil Burner Co., Rosamond, Calif.
Brandenburg Industries, Inc., Baltimore 9, Md.
Cary Mfg. Co., Waupaca, Wisc.
Chandler Co., Cedar Rapids, Iowa
Coleman Co., Inc., The, Wichita, Kan.
Domestic Mfg. Co., Seattle, Wash.
Duo-Therm Div., Lansing 3, Mich.
Electro-Watt Industries, Inc., Salem, Ore.
Firewel Co., Inc., The, Buffalo 25, N.Y.
Hall-Neal Furnace Co., Indianapolis, Ind.
Henry Furnace Co., Medina, Ohio
Hess Co., The, Chicago 50, Ill.
Illinois Iron & Bolt Co., Carpentersville, Ill.
International Oil Burner Co., St. Louis 10, Mo.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Kresky Mfg. Co., Petaluma, Calif.
Little Burner Co., Inc., San Rafael, Calif.
Meyer Furnace Co., Peoria 2, Ill.
Morrison Steel Prods. Inc., Buffalo 7, N.Y.
Northwest Metal Prods. Inc., Seattle, Wash.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Oran Co., Columbus, Ohio
Patten Co., J. V., Sycamore, Ill.
Perfection Stove Co., Cleveland 4, Ohio
Reliance Prods. Corp., Portland 4, Ore.
Richmond Rad. Co., New York 17, N.Y.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Scott-Newcomb, Inc., St. Louis 19, Mo.
Silent Sioux Corp., Orange City, Iowa
Steel City Furnace Corp., Springdale, Pa.
Thatcher Furnace Co., Garwood, N.J.
Thermo Prods., Inc., N. Judson, Ind.
Viking Oil Co., Milwaukee, Wisc.
Waterman-Waterbury Co., The, Minneapolis 13, Minn.

Forced Air, Wall Flame Vertical Rotary

American Fdry. & Furnace Co., Bloomington, Ill.
Fluid Heat Div., Baltimore 24, Md.
Marietta Metal Prods. Corp., Marietta, Pa.
O'Halloran Industries, Detroit 4, Mich.
Pacific Oil Co., Fall River, Mass.
Timken Silent Automatic Div., Jackson, Mich.
Toridheet Div., Cleveland 2, Ohio
Viking Oil Co., Milwaukee, Wisc.

Gravity, High Pressure Burner

Airflame, Inc., Waukegan, Ill.
American Ideal-Aire Corp., Mineola, N.Y.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anchor Div., New Albany, Ind.
Armstrong Furnace Co., Columbus 12, Ohio
Auburn Burner Co., Auburn, Ind.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Billow Corp., Chicago 6, Ill.
Bryant Air Conditioning Corp., Philadelphia 23, Pa.
Bryant Heater Div., Cleveland, Ohio
Cary Mfg. Co., Waupaca, Wisc.
Century Eng. Corp., Cedar Rapids, Ia.
Certified Furnace Co., St. Paul 4, Minn.
Chandler Co., Cedar Rapids, Ia.
Chicago Steel Furnace Co., Chicago, Ill.
Combustioneer Div., Springfield, Ohio
Conco Eng. Works, Mendota, Ill.
Delta Htg. Corp., Trenton 8, N.J.
Eclipse Fuel Eng. Co., Rockford, Ill.
Electro-Watt Industries, Inc., Salem, Ore.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Farquhar Furniture Co., The, Wilmington, Ohio
Firewel Co., Inc., The, Buffalo 25, N.Y.
Fluid Heat Div., Baltimore 24, Md.
Forest City Foundries Co., The, Cleveland 13, Ohio
Green Colonial Furnace Co., Des Moines, Ia.
Hall-Neal Furnace Co., Indianapolis, Ind.
Hart Heat Div., Peoria, Ill.
Henry Furnace Co., Medina, Ohio
Hess Co., The, Chicago 50, Ill.
Home Furnace Co., Holland, Mich.
Illinois Iron & Bolt Co., Carpentersville, Ill.
International Heater Co., Utica, N.Y.
International Oil Burner Co., St. Louis 10, Mo.
Jackson & Church Co., Saginaw, Mich.
Kaustine Co., Inc., Perry, N.Y.
Keith Furnace Co., Des Moines, Iowa
Ko-Z-Aire Prods., Inc., Red Oak, Iowa
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Leahy Mfg. Co., Los Angeles 21, Calif.
Leeson Air Conditioning Corp., Detroit 27, Mich.
Lennox Furnace Co., Marshalltown, Iowa
Majestic Co., Inc., The, Huntington, Ind.
Major Oil Burner Co., Philadelphia 22, Pa.
Metro Oil Burner Mfg. Co., Inc., Easthampton, Mass.
Meyer Furnace Co., Peoria 2, Ill.
Montag Stove & Furnace Works, Portland 17, Ore.
Morrison Steel Prods., Inc., Buffalo 7, N.Y.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Niagara Furnace Div., Cleveland 13, Ohio
Norge Heat Div., Kalamazoo, Mich.
O'Halloran Industries, Detroit 4, Mich.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Patten Co., J. V., Sycamore, Ill.
Perfection Stove Co., Cleveland 4, Ohio
Radiant-Aire Corp., Michigan City, Ind.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Sandberg Mfg. Co., Portland 10, Ore.
Silent Automatic Prods., Jackson, Mich.
Steel City Furnace Corp., Springdale, Pa.
Stewart Oil Burner Co., Hanover, Pa.
Timken Silent Automatic Div., Jackson, Mich.
U.S. Machine Div., Lebanon, Ind.
U.S. Rad. Corp., Detroit 26, Mich.
Viking Oil Co., Milwaukee, Wisc.
Volcano Burner Corp., New York 61, N.Y.
Waterman-Waterbury Co., The, Minneapolis 13, Minn.
Wayne Home Eqpt. Co., Inc., Ft. Wayne, Ind.
Williams Automatic, Inc., White Plains, N.Y.
Williamson Heater Co., The, Cincinnati 9, Ohio

Gravity, Low Pressure Burner

Airflame, Inc., Waukegan, Ill.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Billow Corp., Chicago 6, Ill.
Bryant Heater Div., Cleevland, Ohio
Combustioneer Div., Springfield, Ohio
Denver Fire Clay Co., Denver 17, Colo.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Leahy Mfg. Co., Los Angeles 21, Calif.
Norman Prods. Co., Columbus, Ohio
O'Halloran Industries, Detroit 4, Mich.
Pennsylvania Furnace & Iron Co., Warren, Pa.
Schwab Safe Co., Lafayette, Ind.
U.S. Machine Div., Lebanon, Mich.
Viking Mfg. Co., Cleveland 14, Ohio
Viking Oil Co., Milwaukee, Wisc.

Gravity, Vaporizing Burner

Allied Htg. & Air Conditioning Co., Lawndale, Calif.
American Gas Machine Co., Albert Lea, Minn.
Beyer Oil Burner Co., Rosamond, Calif.
Cary Mfg. Co., Waupaca, Wisc.
Century Eng. Corp., Cedar Rapids, Ia.
Certified Furnace Co., St. Paul 4, Minn.
Chandler Co., Cedar Rapids, Ia.
Coleman Co., Inc., The, Wichita, Kan.
Delco Appliance Div., Rochester, N.Y.
Delta Htg. Corp., Trenton, N.J.
Duo-Therm Div., Lansing 3, Mich.
Electro-Watt Industries, Inc., Salem, Ore.
Firewel Co., Inc., The, Buffalo 25, N.Y.
Hall-Neal Furnace Co., Indianapolis, Ind.
Henry Furnace Co., Medina, Ohio
Illinois Iron & Bolt Co., Carpentersville, Ill.
International Oil Burner Co., St. Louis 10, Mo.
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Kresky Mfg. Co., Inc., Petaluma, Calif.

Laco Oil Burner Co., Inc., Griswold, Ia.
Little Burner Co., H. C., Inc., San Rafael, Calif.
Meyer Furnace Co., Peoria 2, Ill.
Northwest Metal Prods., Inc., Seattle, Wash.
O'Halloran Industries, Detroit 4, Mich.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Oran Co., Columbus, Ohio
Patten Co., J. V., Sycamore, Ill.
Perfection Stove Co., Cleveland 4, Ohio
Prentiss Wabers Prods. Co., Wisconsin Rapids, Wisc.
Reliance Prods. Corp., Portland 14, Ore.
Sam-Bee Oil Burner Co., So. Bend 14, Ind.
Therm Gas Generator Co., Inc., Seattle, Wash.
Waterman-Waterbury Co., The, Minneapolis 13, Minn.

Gravity, Wall Flame Vertical Rotary

O'Halloran Industries, Detroit 4, Mich.

Pipeless, Oilfired

Beyer Oil Burner Co., Rosamond, Calif.
Delta Htg. Corp., Trenton 8, N.J.
Harvey, C. T., Portsmouth, Va.
Montag Stove & Furnace Works, Portland, Ore.
Pacific Oil Co., Fall River, Mass.
Perfection Stove Co., Cleveland 4, Ohio
Standard Arcoil Corp., Newark 8, N.J.
Waterman-Waterbury Co., The, Minneapolis 13, Minn.

Portable

Air Conditioning Eng. Co., Cambridge 41, Mass.
American Crop Drying Eqpt. Co., Crystal Lake, Ill.
Auburn Burner Co., Auburn, Ind.
Norge Heat Div., Kalamazoo, Mich.
Quiet Automatic Burner Corp., Newark 4, N.J.
Silent Glow Oil Corp., Hartford 6, Conn.

Wall Furnaces

(See listing on page 31d under Space Heaters, Oilfired Wall Furnaces)

Furnace Accessories

Automatic Door Closer

Falz Mfg., St. Paul 4, Minn.

Bearings

Lau Blower Co., The, Dayton 7, Ohio
Randall Graphite Bearings, Inc., Lima, Ohio

Belts

Gates Rubber Co., The, Denver 17, Colo.
U.S. Rubber Co., New York 20, N.Y.

Blowers

Air Controls, Inc., Cleveland, Ohio
American Furnace Co., St. Louis 10, Mo.
Auburn Fdry., Inc., Auburn, Ind.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Bishop & Babcock Mfg. Co., Cleveland 14, Ohio
Brundage Co., Kalamazoo, Mich.
Buffalo Forge Co., Inc., Buffalo, N.Y.
Campbell Htg. Co., Des Moines 17, Iowa
Cary Mfg. Co., Waupaca, Wisc.
Clarage Fan Co., Kalamazoo, Mich.
Connelley Co., St. Louis 3, Mo.
Dowagiac Steel Furnace Co., Dowagiac, Mich.
Ex Cel Co., Dowagiac, Mich.
Fasco Industries, Inc., Rochester 2, N.Y.
Firewel Co., Inc., The, Buffalo 25, N.Y.
Gross-Aire Mfg. Co., Overland 14, Mo.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Lennox Furnace Co., Marshalltown, Iowa
Majestic Co., Inc., The, Huntington, Ind.
Martin Fan & Blower Co., Inc., Chicago 50, Ill.
Montag Stove & Furnace Works, Portland 17, Ore.
Peerless Electric Co., The, Warren, Ohio
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Premier Furnace Co., Dowagiac, Mich.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Silent Sioux Corp., Orange City, Iowa
Viking Air Conditioning Corp., Cleveland 2, Ohio
Western Blower Co., Seattle 4, Wash.
Wing Mfg. Co., L. J., Linden, N.J.

Door Closers

Leisur-Maid Mfg. Corp., Grand Rapids, Mich.

Ducts

(See listings beginning on page 9d)

Humidifiers, Pan Type

Auto-Flo Corp., Detroit, Mich.
Automatic Humidifier Co., Cedar Falls, Iowa
Cary Mfg. Co., Waupaca, Wisc.
Century Eng. Corp., Cedar Rapids, Iowa
Cleveland Humidifier Co., Cleveland 3, Ohio
Floral City Heater Co., Monroe, Mich.
Lennox Furnace Co., Marshalltown, Iowa
McDonnell & Miller, Inc., Chicago 18, Ill.
Maid-O-Mist, Inc., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Premier Furnace Co., Dowagiac, Mich.
Round Oak Co., Inc., of Indiana, Dowagiac, Mich.
Skuttle Mfg. Co., Detroit 7, Mich.
Viking Air Conditioning Corp., Cleveland 2, Ohio

Humidifiers, Spray Type

Air Conditioning Eng. Co., Cambridge 41, Mass.
American Fdry. & Furnace Co., Bloomington, Ill.
Century Eng. Corp., Cedar Rapids, Iowa
Chandler Co., Cedar Rapids, Iowa
Handelan Washed Air Co., Minneapolis 10, Minn.
Hansen Tool & Die Co., Milwaukee 4, Wisc.
Maid-O-Mist, Inc., Chicago 41, Ill.
Rega Mfg. Co., Rochester 20, N.Y.

Jackets

Armstrong Furnace Co., Columbus 12, Ohio
Atlas Mfg. Co., St. Paul 14, Minn.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Cary Mfg. Co., Waupaca, Wisc.
Floral City Heater Co., Monroe, Mich.
General Machine Co., Inc., Emmaus, Pa.
Peerless Furnace & Fdry. Inc., Indianapolis, Ind.
Premier Furnace Co., Dowagiac, Mich.
Thermo-Products, Inc., North Judson, Ind.
Valley Forge Metals Co., Lansdale, Pa.
Vapofier Corp., Chicago 43, Ill.
Williamson Heater Co., The, Cincinnati 9, Ohio

Pillow Blocks

Lau Blower Co., The, Dayton 7, Ohio
Randall Graphite Bearings, Inc., Lima, Ohio

Pulleys

Cary Mfg. Co., Waupaca, Wisc.
Equi-Dyne, Chicago 44, Ill.
Gates Rubber Co., The, Denver 17, Colo.
Lau Blower Co., The, Dayton 7, Ohio

Gauges

Altitude

Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Marsh Corp., Jas. P., Skokie, Ill.
Meriam Instrument Co., The, Cleveland 2, Ohio

Draft

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Bailey Meter Co., Cleveland 10, Ohio
Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Cole Sewell Eng. Co., St. Paul 14, Minn.
Defender Instrument & Regulator Co., St. Louis, Mo.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Ellison Draft Gage Co., Chicago 6, Ill.
Hays Corp., The, Michigan City 7, Ind.
Meriam Instrument Co., The, Cleveland 2, Ohio
Perfex Corp., Milwaukee 7, Wisc.
Preferred Utilities Mfg. Corp., New York 23, N.Y.

Glass, Water

Diamond Power Specialty Corp., Lancaster, Ohio
Ernst Water Column & Gage Co., Livingston, N.J.
Meriam Instrument Co., The, Cleveland 2, Ohio

Liquid Level, Direct Reading

Applied Mechanics Co., Boston 10, Mass.
Bearlee Prods. Co., Green Bay, Wisc.
Boston Auto Gage Co., Pittsfield, Mass.
Boston Machine Works Co., Lynn, Mass.
Defender Instrument & Regulator Co., St. Louis, Mo.
Diamond Power Specialty Corp., Lancaster, Ohio
Fisher Engineering Co., Washington, D.C.
Hays Corp., The, Michigan City 7, Ind.
King Eng. Corp., Ann Arbor, Mich.
Krueger Sentry Gauge Co., Inc., Green Bay, Wisc.
Liquidepth Indicators, Inc., Long Island City 1, N.Y.
Liquidometer Corp., The, Long Island City 1, N.Y.
Mel-Gauge Co., E. Haven, Conn.
Meriam Instrument Co., The, Cleveland 2, Ohio
Rochester Mfg Co., Inc., Rochester 10, N.Y.
Scully Signal Co., Cambridge 4, Mass.
Smith Corp., A. O., Los Angeles 22, Calif.
Viking Pump Co., Cedar Falls, Iowa

Liquid Level, Distant Reading

Bailey Meter Co., Cleveland 10, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Harvey, Inc., Sid, Valley Stream, N.Y.
Hays Corp., The, Michigan City, Ind.
King Eng. Corp., Ann Arbor, Mich.
Krueger Sentry Gauge Co., Inc., Green Bay, Wisc.
Liquidepth Indicators, Inc., Long Island City 1, N.Y.
Liquidometer Corp., The, Long Island City 1, N.Y.
Meriam Instrument Co., The, Cleveland 2, Ohio
Teesdale Co., The R. S., Grand Rapids 3, Mich.

Pressure, Air, Steam

Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Eclipse Fuel Eng Co., Rockford, Ill.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Hays Corp., The, Michigan City 7, Ind.
Marsh Corp., Jas. P., Skokie, Ill.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.

Pressure, Oil

Delavan Mfg. Co., W. Des Moines, Iowa
Eclipse Fuel Eng. Co., Rockford, Ill.
Eddington Metal Specialty Co., Eddington, Pa.
Hays Corp., The, Michigan City 7, Ind.
Marsh Corp., Jas. P., Skokie, Ill.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.

Recording

Bailey Meter Co., Cleveland 10, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Hays Corp., The, Michigan City, Ind.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Sticks, Tank Measuring

Defender Instrument & Regulator Co., St. Louis, Mo.
Degree Day Systems, Woodside, N. Y.
Oregon Woodcraft Co., Beaverton, Ore.

Tank, Low Level, Switch Equipped

Defender Instrument & Regulator Co., St. Louis, Mo.
Liquidepth Indicators, Inc., Long Island City 1, N.Y.
Liquidometer Corp., The, Long Island City 1, N. Y.
McDonnell & Miller, Inc., Chicago 18, Ill.
Magnetrol, Inc., Chicago 23, Ill.

Temperature

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Marsh Corp., Jas. P., Skokie, Ill.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Sarco Co., Inc., New York 1, N.Y.

Vacuum

Bailey Meter Co., Cleveland 10, Ohio
Delavan Mfg. Co., W. Des Moines, Iowa
Marsh Corp., Jas. P., Skokie, Ill.
Meriam Instrument Co., The, Cleveland 2, Ohio
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Preferred Utiilties Mfg. Corp., New York 23, N.Y.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.

Grilles, Registers

Baseboard

A&A Register Co., Cleveland, Ohio
A-J Mfg. Co., Kansas City, Mo.
Air Controls Prods. Inc., Coopersville, Mich.
Auer Register Co., Cleveland 5, Ohio
Barber-Colman Co., Rockford, Ill.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Bradley Mfg. Works, David, Bradley, Ill.
Dole Valve Co., Chicago 10, Ill. (Automatic type)
General Automatic Prod. Corp., Baltimore, Md.
General Electric Co., Bloomfield, N.J.
Gross-Aire Mfg. Co., Overland 14, Mo.
Hart & Cooley Mfg. Co., Holland, Mich.
Independent Register Co., The, Cleveland, Ohio
Lima Register Co., Lima, Ohio
Louvra Corp., The, Union, N.J.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Patco Mfg. Co., Philadelphia 6, Pa.
Premier Furnace Co., Dowagiac, Mich.
Radiation Furnace Corp., Benton Harbor, Mich.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Thermo Base Div., Michigan City, Ind.
Titus, Inc., Waterloo, Iowa
U.S. Register Co., Battle Creek, Mich.
Valley Forge Metals Co., Lansdale, Pa.
Vectaire Mfg. Co., Melrose, Mass.
Viking Mfg. Corp., Cleveland, Ohio

Dampers

Air Controls Prods. Inc., Coopersville, Mich.
American Fdry. & Furnace Co., Bloomington, Ill.
Barber-Colman Co., Rockford, Ill.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Independent Register Co., The, Cleveland, Ohio
Louvra Corp., The, Union, N.J.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
U.S. Register Co., Battle Creek, Mich.

Diffusers, Ceiling Type

A&A Register Co., Cleveland, Ohio
Air Controls Prods. Inc., Coopersville, Mich.
Auer Register Co., Cleveland 5, Ohio
Barber-Colman Co., Rockford, Ill.
Conner Eng. Corp., Danbury, Conn.
Hart & Cooley Mfg. Co., Holland, Mich.
Independent Register Co., The, Cleveland, Ohio
Lima Register Co., Lima, Ohio
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
U.S. Register Co., Battle Creek, Mich.

Diffusers, Floor Type

Hart & Cooley Mfg. Co., Holland, Mich.

Diffusers, Wall Type

A&A Register Co., Cleveland, Ohio
A-J Mfg. Co., Kansas City, Mo.
Air Control Prods., Inc., Coopersville, Mich.
Auer Register Co., Cleveland 5, Ohio
Barber-Colman Co., Rockford, Ill.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Grand Island Furnace & Supply Co., Grand Island, Nebr.
Hart & Cooley Mfg. Co., Holland, Mich.
Independent Register Co., The, Cleveland, Ohio
Lima Register Co., Lima, Ohio
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Mueller Furnace Co., Milwaukee 15, Wisc.
Premier Furnace Co., Dowagiac, Mich.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
U.S. Register Co., Battle Creek, Mich.
Vectaire Mfg. Co., Melrose, Mass.

Floor

A&A Register Co., Cleveland, Ohio
A-J Mfg. Co., Kansas City, Mo.
Air Controls Prods., Inc., Coopersville, Mich.
Alton Mfg. Co., Dallas 2, Texas
Auer Register Co., Cleveland 5, Ohio
Barber-Colman Co., Rockford, Ill.
Chandler Co., Cedar Rapids, Iowa
Hart & Cooley Mfg. Co., Holland, Mich.
Independent Register Co., The, Cleveland, Ohio
Lima Register Co., Lima, Ohio
Louvra Corp., The, Union, N.J.
Midco Register Corp., St. Paul 5, Minn.
Mueller Furnace Co, L. J., Milwaukee 15, Wisc.
National Grille & Register Co., Cleveland 4, Ohio
Rock Island Register Co., Rock Island, Ill.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
U.S. Register Co., Battle Creek, Mich.
Viking Mfg. Corp., Cleveland, Ohio

Perimeter

International Oil Burner Co., St. Louis 10, Mo.
Lima Register Co., Lima, Ohio
Linden Metal Specialty Co., Anoka, Minn.
Titus, Inc., Waterloo, Iowa

Splitters

U.S. Register Co., Battle Creek, Mich.

Wall

A&A Register Co., Cleveland, Ohio
A-J Mfg. Co., Kansas City, Mo.
Air Controls Prods., Inc., Coopersville, Mich.
Alton Mfg. Co., Dallas 2, Texas
Auer Register Co., Cleveland 5, Ohio
Barber-Colman Co., Rockford, Ill.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Bradley Mfg. Works, David, Bradley, Ill.
Chandler Co., Cedar Rapids, Iowa
Dole Valve Co., Chicago 10, Ill. (Automatic type)

General Electric Co., Bloomfield, N.J.
Hart & Cooley Mfg. Co., Holland, Mich.
Hastings Air Conditioning Co., Inc., Hastings, Neb.
Independent Register Co., The, Cleveland, Ohio
Lima Regisetr Co., Lima, Ohio
Louvra Corp., The, Union, N.J.
Midco Register Corp., St. Paul 5, Minn.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
National Grille & Register Co., Cleveland 4, Ohio
Rock Island Register Co., Rock Island, Ill.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Titus, Inc., Waterloo, Iowa
U.S. Rad. Corp., Detroit 26, Mich.
U.S. Register Co., Battle Creek, Mich.
Viking Mfg. Corp., Cleveland, Ohio

Instruments

Advertising Thermometers

Automatic Devices Co., Inc., Western Springs, Ill.

Air Velocity

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Defender Instrument & Regulator Co., St. Louis, Mo.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Ellison Draft Gage Co., Chicago 6, Ill.
Illinois Testing Laboratories, Inc., Chicago 10, Ill.
Meriam Instrument Co., The, Cleveland 2, Ohio

Air Volume

Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Defender Instrument & Regulator Co., St. Louis, Mo.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.

CO_2 *Indicating Portable*

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Cole Sewell Eng. Co., St. Paul 14, Minn.
Defender Instrument & Regulator Co., St. Louis, Mo.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Ellison Draft Gage Co., Chicago 6, Ill.
General Power Plant Corp., Ossining, N.Y.
Hays Corp., The, Michigan City, Ind.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Victory Eng. Corp., Union, N.J.

CO_2 *Indicating, Stationary*

Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Hays Corp., The, Michigan City 7, Ind.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Victory Eng. Corp., Union, N.J.

CO_2 *Recording*

Defender Instrument & Regulator Co., St. Louis, Mo.
Hays Corp., The, Michigan City 7, Ind.
Victory Eng. Corp., Union, N.J.

Combustion Test Sets, Portable

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Defender Instrument & Regulator Co., St. Louis, Mo.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Ellison Draft Gage Co., Chicago 6, Ill.
General Power Plant Corp., Ossining, N.Y.
Hays Corp., The, Michigan City 7, Ind.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Victory Eng. Corp., Union, N.J.

Degree-Day Recorder

Hidy & Co., Elmo D., Cincinnati 36, Ohio

Dial Thermometers

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Cole Sewell Eng. Co., St. Paul 14, Minn.
Defender Instrument & Regulator Co., St. Louis, Mo.
Degree Day Systems, Woodside, N.Y.
Marsh Corp., Jas. P., Skokie, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
New York Air Valve Corp., Brooklyn, N.Y.
Pacific Transducer Corp., Los Angeles 64, Calif.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.
Sarco Co., Inc., New York 1, N.Y.
Taylor Instrument Co., Rochester 1, N.Y.
Weston Electrical Instrument Corp., Newark 5, N.J.

Draft Indicating

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Bailey Meter Co., Cleveland 10, Ohio
Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Ellison Draft Gage Co., Chicago 6, Ill.
General Power Plant Corp., Ossining, N.Y.
Hays Corp., The, Michigan City 7, Ind.
Meriam Instrument Co., The, Cleveland 2, Ohio
Perfex Corp., Milwaukee 7, Wisc.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Victory Eng. Corp., Union, N.J.

Draft Recording

Bailey Meter Co., Cleveland 10, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Hays Corp., The, Michigan City 7, Ind.
Victory Eng. Corp., Union, N.J.

Flow Indicating

Bailey Meter Co., Cleveland 10, Ohio
Bowser, Inc., Ft. Wayne, Ind.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Hays Corp., The, Michigan City 7, Ind.
McDonnell & Miller, Inc., Chicago 18, Ill.
Magnetrol, Inc., Chicago 23, Ill.
Meriam Instrument Co., The, Cleveland 2, Ohio
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Republic Flow Meters Co., Chicago 47, Ill.
Smith Corp., A. O., Los Angeles 22, Calif.

Flow Recording

Bailey Meter Co., Cleveland 10, Ohio
Bowser, Inc., Ft. Wayne, Ind.
Hays Corp., The, Michigan City 7, Ind.
King Eng. Corp., Ann Arbor, Mich.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Smith Corp., A. O., Los Angeles 22, Calif.

High-Low Thermometers

Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Taylor Instrument Co., Rochester 1, N.Y.
Weston Electrical Instrument Corp., Newark 5, N.J.

Humidity Indicating

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Friez Instrument Div., Baltimore 4, Md.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Weston Electrical Instrument Corp., Newark 5, N.J.

Humidity Recording

Barber-Colman Co., Rockford, Ill.
Friez Instrument Div., Baltimore 4, Md.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Weston Electrical Instrument Corp., Newark 5, N.J.

Manometers

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Defender Instrument & Regulator Co., St. Louis, Mo.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Ellison Draft Gage Co., Chicago 6, Ill.
King Eng. Corp., Ann Arbor, Mich.
Meriam Instrument Co., The, Cleveland 2, Ohio

Pocket Thermometers

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Cole Sewell Eng. Co., St. Paul 14, Minn.
Marsh Corp., Jas. P., Skokie, Ill.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Weston Electrical Instrument Corp., Newark 5, N.J.

Pressure Indicating

Bailey Meter Co., Cleveland 10, Ohio
Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Cooper Co., Clark, Palmyra, N.J.
Dwyer Mfg. Co., F. W., Chicago 12, Ill.
Ellison Draft Gage Co., Chicago 6, Ill.
Hays Corp., The, Michigan City 7, Ind.
King Eng. Corp., Ann Arbor, Mich.
Marsh Corp., Jas. P., Skokie, Ill.
Meriam Instrument Co., The, Cleveland 2, Ohio
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
New York Air Valve Corp., Brooklyn, N.Y.
Perfex Corp., Milwaukee 7, Wisc.
Rochester Mfg. Co., Inc., Rochester 10, N.Y.
Weston Electrical Instrument Corp., Newark 5, N.J.

Pressure Recording

Bailey Meter Co., Cleveland 10, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Hays Corp., The, Michigan City 7, Ind.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Weston Electrical Instrument Corp., Newark 5, N.J.

Pyrometers

Bailey Meter Co., Cleveland 10, Ohio
Barber-Colman Co., Rockford, Ill.
Illinois Testing Laboratories, Inc., Chicago 10, Ill.

Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Weston Electrical Instrument Corp., Newark 5, N.J.

Room Thermometers

Automatic Devices Co., Inc., Western Springs, Ill.
Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Degree Day Systems, Woodside, N.Y.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Temperature Indicating

Automatic Devices Co., Inc., Western Springs, Ill.
Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Bailey Meter Co., Cleveland 10, Ohio
Barber-Colman Co., Rockford, Ill.
Clarkstan Corp., Los Angeles 64, Calif.
Cleveland Fuel Eqpt. Co., Cleveland 9, Ohio
Cooper Co., Clark, Palmyra, N.J.
Defender Instrument & Regulator Co., St. Louis, Mo.
Degree Day Systems, Woodside, N.Y.
Illinois Testing Laboratories, Inc., Chicago 10, Ill.
Marsh Corp., Jas. P., Skokie, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Sarco Co., Inc., New York 1, N.Y.
Victory Eng. Corp., Union, N.J.
Weston Electrical Instrument Corp., Newark 5, N.J.

Temperature Recording

Bacharach Industrial Instrument Co., Pittsburgh 8, Pa.
Bailey Meter Co., Cleveland 10, Ohio
Barber-Colman Co., Rockford, Ill.
Cole Sewell Eng. Co., St. Paul 14, Minn.
Defender Instrument & Regulator Co., St. Louis, Mo.
Friez Instrument Div., Baltimore 4, Md.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Victory Eng. Corp., Union, N.J.
Weston Electrical Instrument Corp., Newark 5, N.J.

Vacuum Indicating

Bailey Meter Co., Cleveland 10, Ohio
Elison Draft Gage Co., Chicago 6, Ill.
General Electric Co., Schenectady 5, N.Y.
King Eng. Corp., Ann Arbor, Mich.
Meriam Instrument Co., The, Cleveland 2, Ohio
New York Air Valve Corp., Brooklyn, N.Y.

Vacuum Recording

Bailey Meter Co., Cleveland 10, Ohio
Defender Instrument & Regulator Co., St. Louis, Mo.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Insulation

Boiler

Armstrong Cork Co., Lancaster, Pa.
Babcock & Wilcox Co., New York 17, N.Y.
Denver Fire Clay Co., The, Denver 17, Colo.
Eagle-Picher Co., The, Cincinnati 1, Ohio
General Refractories Co., Philadelphia, Pa.
Grant Wilson, Inc., Chicago 4, Ill.
Insulating Refractories Co., San Rafael, Calif.
Johns-Manville Corp., New York 16, N.Y.
Mexico Refractories Co., Mexico, Mo.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Reflectal Corp., New York City, N.Y.
Refractory & Insulation Corp., Port Kennedy, Pa.
Sall Mountain Co., Hamilton, Ohio
Zonolite Co., Chicago 3, Ill.

Duct

Armstrong Cork Co., Lancaster, Pa.
Eagle-Picher Co., The, Cincinnati 1, Ohio
General Refractories Co., Philadelphia, Pa.
Grant Wilson, Inc., Chicago 4, Ill.
Johns-Manville Corp., New York 16, N.Y.
Mexico Refractories Co., Mexico, Mo.
Reflectal Corp., New York City, N.Y.
Refractory & Insulation Corp., Port Kennedy, Pa.
Sall Mountain Co., Chicago 3, Ill.
Sall Mountain Co., Hamilton, Ohio
Zonolite Co., Chicago 3, Ill.

Firebox, High Temperature

Armstrong Cork Co., Lancaster, Pa.
Babcock & Wilcox Co., New York 17, N.Y.
Carolina Refractories Co., Hartsville, S.C.
Denver Fire Clay Co., The, Denver 17, Colo.
Gem Clay Forming Co., The, Sebring, Ohio
Mexico Refractories Co., Mexico, Mo.
National Fuel Conservation Co., Inc., White Plains, N.Y.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Refractory & Insulation Corp., Port Kennedy, Pa.
S.O.S. Prods. Co., Inc., Brooklyn 22, N.Y.
Sall Mountain Co., Hamilton, Ohio
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.
Walsh Refractories Corp., St. Louis 7, Mo.
Zonolite Co., Chicago 3, Ill.

House, Bats

Armstrong Cork Co., Lancaster, Pa.
Eagle-Picher Co., The, Cincinnati 1, Ohio
Johns-Manville Corp., New York 16, N.Y.

House, Blanket

Armstrong Cork Co., Lancaster, Pa.
Eagle-Picher Co., Cincinnati 1, Ohio
Johns-Manville Corp., New York 16, N.Y.

House, Blown

Armstrong Cork Co., Lancaster, Pa.
Eagle-Picher Co., The, Cincinnati 1, Ohio
Johns-Manville Corp., New York 16, N.Y.
Zonolite Co., Chicago 3, Ill.

House, Reflective

Grant Wilson, Inc., Chicago 4, Ill.
Reflectal Corp., New York City, N.Y.

Pipe

Armstrong Cork Co., Lancaster, Pa.
Eagle-Picher Co., The, Cincinnati 1, Ohio
Gem Clay Forming Co., The, Sebring, Ohio
Grant Wilson, Inc., Chicago 4, Ill.
Johns-Manville Corp., New York 16, N.Y.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Reflectal Corp., New York City, N.Y.
Refractory & Insulation Corp., Port Kennedy, Pa.
Sall Mountain Co., Chicago 3, Ill.
Sall Mountain Co., Hamilton, Ohio
Zonolite Co., Chicago 3, Ill.

Sound

Eagle-Picher Co., The, Cincinnati 1, Ohio
Grant Wilson, Inc., Chicago 4, Ill.
Johns-Manville Corp., New York 16, N.Y.
Refractory & Insulation Corp., Port Kennedy, Pa.
Sall Mountain Co., Hamilton, Ohio
Zonolite Co., Chicago 3, Ill.

Tank

Armstrong Cork Co., Lancaster, Pa.
Eagle-Picher Co., The, Cincinnati 1, Ohio
General Refractories Co., Philadelphia, Pa.
Grant Wilson Inc., Chicago 4, Ill.
Insulating Refractories Co., San Rafael, Calif.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Reflectal Corp., New York City, N.Y.
Refractory & Insulation Corp., Port Kennedy, Pa.
Sall Mountain Co., Hamilton, Ohio
Zonolite Co., Chicago 3, Ill.

Wall-Board, Rigid

Armstrong Cork Co., Lancaster, Pa.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Refractory & Insulation Corp., Port Kennedy, Pa.

Wall-Board, Semi-Rigid

Nock Fire Brick Co., The, Cleveland 3, Ohio
Refractory & Insulation Corp., Port Kennedy, Pa.
Sall Mountain Co., Hamilton, Ohio

Mirrors

Flame Inspection

Delavan Mfg. Co., W. Des Moines, Iowa

Motors, Electric

Damper

Barber-Colman Co., Rockford, Ill.
Fasco Industries, Inc., Rochester 2, N.Y.
General Electric Co., Schenectady 5, N.Y.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Radex Corp., Chicago 14, Ill.

Hot Water Circulator

Delco Prods. Div., Dayton 1, Ohio
Emerson Electric Mfg. Co., The, St. Louis 21, Mo.
Fasco Industries, Inc., Rochester 2, N.Y.
General Electric Co., Ft. Wayne 2, Ind.
General Electric Co., Schenectady 5, N.Y.
Marathon Electric Mfg. Corp., Wausau, Wisc.
Piqua Machine & Mfg. Co., The, Piqua, Ohio
Radex Corp., Chicago 14, Ill.
Silent Flame Mfg. Co., Inc., New York 72, N.Y.
Small Motors Inc., Chicago 14, Ill.
Westinghouse Electric Corp., Lima, Ohio

Oilburner

Century Electric Co., St. Louis 3, Mo.
Delco Appliance Div., Rochester, N.Y.
Delco Prods. Div., Dayton 1, Ohio
Doerr Electric Corp., Cedarburg, Wisc.
Electric Motor Development Co., Wickliffe, Ohio
Electro Machines, Inc., Cedarburg, Wisc.
Emerson Electric Mfg. Co., The, St. Louis 21, Mo.
Fasco Industries, Inc., Rochester 2, N.Y.
General Electric Co., Ft. Wayne, Ind.
General Electric Co., Schenectady 5, N.Y.
HomEase Prods. Div., Inc., Paterson, N.J.
Hoover Co., Kingston-Colney Div., No. Plainfield, N.J.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Marathon Electric Mfg. Corp., Wausau, Wisc.
Marco Industries, Inc., Depew, N.Y.
Ohio Electric Mfg. Co., Cleveland 4, Ohio
Packard Electric Div., Warren, Ohio
Radex Corp., Chicago 14, Ill.
Ray Oil Burner Co., San Francisco 12, Calif.
Small Motors Inc., Chicago 14, Ill.
Westinghouse Electric Corp., Lima, Ohio
Westinghouse Electric Corp., Pittsburgh 30, Pa.

Warm Air Blower

Delco Appliance Div., Rochester, N.Y.
Delco Prods. Div., Dayton 1, Ohio
Doerr Electric Corp., Cedarburg, Wisc.
Emerson Electric Mfg. Co., St. Louis 21, Mo.
Fasco Industries, Inc., Rochester 2, N.Y.
General Electric Co., Schenectady 5, N.Y.
Hoover Co., No. Plainfield, N.J.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Marathon Electric Mfg. Corp., Wausau, Wisc.
Marco Industries, Inc., Depew, N.Y.
Peerless Electric Co., The, Warren, Ohio
Radex Corp., Chicago 14, Ill.
Ray Oil Burner Co., San Francisco 12, Calif.
Small Motors Inc., Chicago 14, Ill.
Smith Corp., A. O., Los Angeles 22, Calif.
Universal Electric Co., Owosso, Mich.
Westinghouse Electric Corp., Lima, Ohio

Nozzles

Atomizing Heavy Oil

Delavan Mfg. Co., W. Des Moines, Iowa
Eclipse Fuel Eng. Co., Rockford, Ill.
Eddington Metal Specialty Co., Eddington, Pa.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Leahy Mfg. Co., Los Angeles 21, Calif.
Monarch Mfg. Works, Inc., Philadelphia 34, Pa.
Ray Oil Burner Co., San Francisco 12, Calif.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Steinen Mfg. Co., Wm., Newark 5, N.J.

Atomizing Light Oil

Boston Machine Works Co., Lynn, Mass.
Century Eng. Corp., Cedar Rapids, Iowa
Delavan Mfg. Co., W. Des Moines, Iowa
Eclipse Fuel Eng. Co., Rockford, Ill.
Eddington Metal Specialty Co., Eddington, Pa.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Hago Prods., Irvington, N.J.
Harsch & Co., H., Maplewood, N.J.
Harvey, Inc., Sid., Valley Stream, N.Y.
Huss Oil Burner Accessories Corp., The, E. Port Chester, Conn.
Monarch Mfg. Works, Inc., Philadelphia 34, Pa.
Ray Oil Burner Co., San Francisco 12, Calif.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Steinen Mfg. Co., Wm., Newark 5, N.J.
Sussex Nozzle Co., Morristown, N.J.
Ultra Metal Utilities Corp., Long Island City 2, N.Y.

Atomizing Water

Delavan Mfg. Co., W. Des Moines, Iowa
Eddington Metal Specialty Co., Eddington, Pa.
Maid-O-Mist, Inc., Chicago 41, Ill.
Monarch Mfg. Works, Inc., Philadelphia 34, Pa.
Rega Mfg. Co., Rochester 20, N.Y.
Steinen Mfg. Co., Wm., Newark 5, N.J.

Extractors

Boston Machine Works Co., Lynn, Mass.

Oil Delivery

Bowser, Inc., Ft. Wayne, Ind.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Mechanical Prods. Co., Seattle 4, Wash.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Steinen Mfg. Co., Wm., Newark 5, N.J.

Service Kits

Boston Machine Works Co., Lynn, Mass.
Eddington Metal Specialty Co., Eddington, Pa.
Steinen Mfg. Co., Wm., Newark 5, N.J.

Oilburners, Domestic

Atomizing Vertical Rotary

Hardinge Oil Burner & Mfg. Co., Chicago 13, Ill.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Iron Fireman Mfg. Co., Cleveland, Ohio
MacLeod Co., Cincinnati 22, Ohio

High Pressure, Gun

Acme Heat & Power, Inc., Brooklyn 6, N.Y.
Acme Oil Burner Co., Cedar Rapids, Iowa
Acme Tool & Gauge Co., Providence 4, R.I.
Alan Distributors, Inc., Worcester, Mass.
American Lava Corp., Chattanooga 5, Tenn.
Aire Director Mfg. Co., Seattle 9, Wash.
Airflame, Inc., Waukegan, Ill.
Airtemp Div., Dayton 1, Ohio
Aldrich Co., Wyoming, Ill.
Allied Eng. Co., Allston, Mass.
American Crop Drying Eqpt. Co., Crystal Lake, Ill.
American Furnace Co., St. Louis 10, Mo.
American Mohawk Co., Inc., New York 14, N.Y.
American Oil Burners & Htg. Utilities, Brooklyn 20, N.Y.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anchor Div., New Albany, Ind.
Anchor Stove & Range Co., New Albany, Ind.
Armstrong Furnace Co., Columbus 12, Ohio
Arrow Petroleum Co., Chicago, Ill.
Aston Products, Inc., Hazel Park, Mich.
Atlas Mfg. Corp., Brooklyn, N.Y.
Auburn Burner Co., Auburn, Ind.
Auto-Heat Corp., Middletown, Conn.
Automatic Burner Corp., Chicago 12, Ill.
Automatic Firing Corp., St. Louis, Mo.
Bard Mfg. Co., Bryan, Ohio
Barclay, Inc., Robert, Chicago 7, Ill.
Bascom Co., Inc., Geo. R., Dorchester 22, Mass.
Beckett Corp., R. W., Elyria, Ohio
Berkley Mfg. Co., Philadelphia, Pa.
Bethlehem Fdry. & Machine Co., Bethlehem, Pa.
Bettendorf Oil Burner Co., Marshalltown, Iowa
Braun Bros. Oil Co., Winnetka, Ill.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Bryan Steam Corp., Peru, Ind.
Bryant Air Conditioning Corp., Peru, Ind.
Bryant Heater Div., Cleveland 10, Ohio
Burn-Rite Products Co., Yonkers 2, N.Y.
Caloroil Burner Corp., Hartford, Conn.
Campbell Machine Co., Minneapolis, Minn.
Capson Co., Brooklyn, N.Y.
Carlin Co., Wethersfield, Conn.
Carlton Oil Burner Co., Hartford 3, Conn.
Cary Mfg. Co., Waupaca, Wisc.
Century Eng. Corp., Cedar Rapids, Iowa
Certified Furnace Co., St. Paul 4, Minn.
Chalmers Oil Burner Co., Minneapolis, Minn.
Chandler Co., Cedar Rapids, Iowa
Cities Service Oil Co. (Pa.), New York, N.Y.
Citro Oil Burners Corp., Pompton Lakes, N.J.
Coleman Co., Inc., Wichita, Kan.
Columbia Boiler Co., Pottstown, Pa.
Combustioneer Div., Springfield, Ohio
Conco Eng. Works, Mendota, Ill.
Concord Oil Corp., Lawrence, N.Y.
Connecticut Refining Co., W. Haven, Conn.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Connelley Co., St. Louis 3, Mo.
Consolidated Industries, Inc., Lafayette, Ind.
Crane Co., Chicago 40, Ill.
Crown Petroleum Corp., Hartford, Conn.
Cuthrell Machine Works, Norfolk 6, Va.
"David" Automatic Oil Burners, Camden, N.J.
Davis Eng. Co., Yonkers, N.Y.
Delco Appliance Div., Rochester, N.Y.
D'Elia Oil Burner Co., Bridgeport 8, Conn.
Delta Heating Corp., Trenton 8, N.J.
Des Moines Furnace & Stove Repair Co., Des Moines 5, Iowa
De Soto Oil Burner Corp., York, Pa.
Dewey-Shepard Boiler Co., Indianapolis, Ind.
Diamond Instrument Co., Wakefield, Mass.
Diamond Iron Works, Inc., Minneapolis 11, Minn.

Diesel Burners Mfg. Co., Moosup, Conn.
Diesel Oil Burner Corp. of N.Y., Jamaica 5, N.Y.
Domestic Mfg. Co., Seattle, Wash.
Dowagiac Steel Furnace Co., Dowagiac, Mich.
Drexel Mfg. Co., Philadelphia, Pa.
Duff, David & Son, New Bedford, Mass.
East Coast Co., Boston 9, Mass.
Eastern Tool Co. of Springfield, Mass.
Eckhart Mfg. Co., Inc., Union, N.J.
Eddy Stoker Corp., Chicago, Ill.
Eds-Wil Burner Corp., Chicago, Ill.
Electric Furnace-Man, Inc., Emmaus, Pa.
Electro-Watt, Inc., Seattle 1, Wash.
Electro-Watt Industries, Inc., Salem, Ore.
Electrol Burner Mfg. Co., Inc., Rutherford, N.J.
Engineer Co., The, New York 6, N.Y.
Enterprise Engine & Machinery Co., San Francisco 10, Calif.
Esso Standard Oil Co., New York 19, N.Y.
Ewbank Co., Natamoras, Pa.
Ex Cel Co., Dowagiac, Mich.
Excelsior Steel Furnace Co., Chicago, Ill.
Fairchester Oil Co., Inc., Port Chester, N.Y.
Fairfield Oil Heating Co., Inc., Greenwich, Conn.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Fargo Fdry. Co., Inc., Fargo, N.D.
Farquhar Furnace Co., Wilmington, Ohio
Faultless Oil Burner Co., St. Albans, L.I., N.Y.
Federal Boiler Co., Inc., Midland Park, N.J.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Flame-Master Co., Chicago 26, Ill.
Floral City Heater Co., Monroe, Mich.
Fluid Heat Div., Baltimore 24, Md.
Forest City Foundries Co., The, Cleveland 13, Ohio
Front Rank Mfg. Co., St. Louis 4, Mo.
Fuel Savers, Inc., Harrisburg, Pa.
General Automatic Prods. Corp., Baltimore 13, Md.
General Machine Co., Inc., Emmaus, Pa.
General Oil Heating Corp., W. New York, N.J.
General Utilities Corp., Philadelphia 21, Pa.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Glo-Heat Co., Philadelphia 40, Pa.
Gold Star Oil Burner Mfg. Co., Inc., Yonkers 2, N.Y.
Golden Flame Mfg. Co., Camden 3, N.J.
Goodrich Oil Burner Mfg. Co., Camden 3, N.J.
Gould Oil Burner Co., Boston 20, Mass.
Green Colonial Furnace Co., Des Moines, Iowa
Greene Mfg. Co., A., Philadelphia, Pa.
Greene & Hodgson, Inc., Providence 5, R.I.
Greenwood Eng. Co., Baltimore 30, Md.
Hart Heat Div., Peoria, Ill.
Harvey, Inc., Sid., Valley Stream, N.Y.
Harvey-Whipple, Inc., Springfield, Mass.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Heatcraft Co., Louisville 2, Ky.
Heet-Master Prod. Co., Baltimore 18, Md.
Heil Co., The, Milwaukee 1, Wisc.
Henry Furnace Co., Medina, Ohio
Herco Oil Burner Corp., Lancaster, Pa.
Hershey Machine & Fdry. Co., Manheim, Pa.
Hershner Mfg. Co., York, Pa.
Holland Furnace Co., Holland, Mich.
HomEase Prods. Div., Inc., Paterson, N.J.
Howell Eng. Corp., Oregon, Ill.
Hubbard Co., Minneapolis, Minn.
Hyle Oil Burner Co., Catonsville, Md.
Illinois Iron & Bolt Co., Chicago, Ill.
International Heater Co., Utica, N.Y.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Jackson & Church Co., Saginaw, Mich.
Jenkins Eng. Co., Seattle 1, Wash.
Johnson Co., S. T., Oakland, Calif.
Keil's, Wilmington, Del.
Keith Furnace Co., Des Moines, Iowa
Kinsley Burner & Machine Co., Providence, R.I.
Kleen Heet, Inc., Chicago 12, Ill.
Kol-Master Corp., Oregon, Ill.
Ko-Z-Aire Prods., Inc., Red Oak, Iowa
Kresky Mfg. Co., Inc., Petaluma, Calif.
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Laco Oil Burner Co., Inc., Griswold, Iowa
Lamson Oil Corp., Providence 5, R.I.
La Salle Oil Burner Co., Inc., Seattle 3, Wash.
Lennox Furnace Co., Marshalltown, Iowa
Lynn Prods. Co., Lynn, Mass.
Macleod Co., Cincinnati 22, Ohio
McPherson Furnace Co., Marshalltown, Iowa
Madsen Service, Minneapolis, Minn.
Majestic Co., Inc., Huntington, Ind.
Major Oil Burner Co., Philadelphia 22, Pa.
Malleable Iron Fittings Co., Branford, Conn.
Mar-Coil Heater Co., Union City, N.J.
Marietta Metal Prods. Corp., Marietta, Pa.
Marnis Oil Co., Inc., New York 51, N.Y.
Master Automatic Oil Burner Co., Kansas City 3, Kan.
May Oil Burner Corp., Baltimore 30, Md.
Mayflower Air-Conditioners, Inc., St. Paul 6, Minn.
Mechanical Prods. Co., Seattle 4, Wash.
Merit Oil Heating Corp., Mt. Vernon, N.Y.
Messer Co., Inc., The, Newark 7, N.J.
Metro Oil Burner Mfg. Co., Inc., Easthampton, Mass.
Meyer Furnace Co., Peoria 2, Ill.
Middleton & Meads Co., Inc., Baltimore 2, Md.
Modern Heat, Inc., Philadelphia 4, Pa.
Montag Stove & Furnace Works, Portland 17, Ore.
Morrison Steel Prods. Inc., Buffalo 7, N.Y.
Mt. Hawley Mfg. Co., Peoria 4, Ill.
Mueller Furnace Co., Milwaukee 15, Wisc.
National Airoil Burner Co., Inc., Philadelphia 34, Pa.
National Home Eqpt. Co., New York 7, N.Y.
National Oil Corp., Richmond, Va.
National Rad. Co., Johnstown, Pa.
Niagara Furnace Div., Cleveland 13, Ohio
Noble Fuel Oil Burner Co., Chicago 22, Ill.
Nola Oil Burner Co., New Orleans 5, La.
Norge Heat Div., Kalamazoo, Mich.
North American Mfg. Co., Cleveland 2, Ohio
Northern New Jersey Oil Co., Newark, N.J.
Norwalk Air Conditioning Corp., The, So. Norwalk, Conn.
Northwest Fdry. & Furnace Co., Portland 2, Ore.
Nu-Way Corp., The, Rock Island, Ill.
O'Halloran Industries, Detroit 4, Mich.
Oil-Elec-Tric Co., St. Paul 4, Minn.
Oil Eqpt. Laboratories, Inc., Elizabeth, N.J.
Oil Gas Generator Burner, Inc., New Castle, Pa.
Olsen Mfg. Co., The C. A., Elyria, Ohio
Olson & Co., Arthur A., Canfield, Ohio
Pacific Automatic Htg. Co., Seattle, Wash.
Paragon Oil Burner Corp., Brooklyn 22, N.Y.
Park Oil Burner, Atlantic City, N.J.
Peerless Heater Div., Boyertown, Pa.
Penn Boiler & Burner Mfg. Corp., Lancaster, Pa.
Perfection Stove Co., Cleveland 4, Ohio
Petro, Cleveland 11, Ohio
Pilgrim Oil Burner Co., Hartford, Conn.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Premier Furnace Co., Dowagiac, Mich.
Quiet Automatic Burner Corp., Newark 4, N.J.
Quiet Heet Mfg. Corp., Newark 5, N.J.
Rackliffe Oil Co., New Britain, Conn.
Radiant Utilities Corp., Brooklyn 14, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Rayfield Co., C. L., Chicago 8, Ill.
Red Wing Oil Burner Co., Medford, Mass.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Robot Auto-Heat Corp., The, Middletown, Conn.
Ronci Machine Co., Centredale 11, R.I.
Rossoe Mfg. Co., Inc., Seattle, Wash.
Round Oak Co., Inc. of Indiana, Dowagiac, Mich.
Russo Inc., Thomas D., Boston 31, Mass.
S-Del Co., The, Berwyn, Pa.
S. K. Co., Inc., The, Camden, N.J.
Sandberg Mfg. Co., Portland 10, Oreg.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Schwab Safe Co., Lafayette, Ind.
Scott-Newcomb, Inc., St. Louis 19, Mo.
Selectrol Eng. Co., Brooklyn 23, N.Y.
Siemon Mfg. Co., Kansas City 8, Mo.
Sigwald Eng. Co., Minneapolis, Minn.
Silent Automatic Prods., Jackson, Mich.
Silent Flame Mfg. Co., Inc., New York 72, N.Y.
Silent Glow Oil Corp., Hartford 6, Conn.
Simplex Oil Heating Corp., Philadelphia 11, Pa.
Sinclair Refining Co., New York, N.Y.
Sorenson-Vana Corp., Omaha, Nebr.
Southern Heater Co., Compton, Calif.
Standard Arcoil Corp., Newark 8, N.J.
Steel Prods., Inc., West Haven, Conn.
Stewart Oil Burner Co., Hanover, Pa.
Stutzman Oil Burner Co., Clifton Heights, Pa.
Sunbeam Oil Burner Mfg. Corp., Bronx, N.Y.
Sunstrand Eng. Co., Rockford, Ill.
Sunland Refining Corp., Fresno, Calif.
Sun-Ray Burner Mfg. Corp., Jamaica, N.Y.
Super Oil Heater Co., Hartford, Conn.
Swirling Oil Burner Mfg. Corp. Long Island City 6, N.Y.

OILBURNERS, DOMESTIC

Synchronous Flame, Inc., Chicago 4, Ill.
Therm Gas Generator Co., Inc., Seattle, Wash.
Thermo-Prods., Inc., No. Judson, Ind.
Timken Silent Automatic Div., Jackson, Mich.
Tjernlund Mfg. Co., St. Paul 8, Minn.
Todd Shipyards Corp., Elmhurst, N.Y.
Toridheet Div., Cleveland 2, Ohio
Trenton Htg. Mfg. Co., Trenton, Mich.
Tru-Heet Co., Trenton, N.J.
Tubing Appliance Co., Inc., Los Angeles 45, Calif.
Tur-Bin Corp., Baltimore 2, Md.
Twin Control Burner Mfg. Co., New York 67, N.Y.
U. S. Machine Div., Lebanon, Ind.
U. S. Petroleum Co., Clifton, N.J.
U. S. Rad. Corp., Detroit 26, Mich.
Viking Oil Co., Milwaukee, Wisc.
Volcano Burner Corp., New York 61, N.Y.
Waltham Oil Burner Co., E. Boston, Mass.
Wayne Home Eqpt. Co., Inc., Ft. Wayne 4, Ind.
Weatherall Eng. Inc., Providence, R.I.
Westchester Home Eqpt. Co., Bronx, N.Y.
West Coast Quiet Heet, Inc., Portland, Ore.
White Fuel Corp., So. Boston, Mass.
Will-Burt Co., The, Orrville, Ohio
Williams Automatic, Inc., White Plains, N.Y.
Williams Div., Bloomington, Ill.
Williamson Heater Co., The, Cincinnati 9, Ohio
Winston Co., Inc., Newark, N.J.
Wisconsin Oil Burner Co., Madison 5, Wisc.
York-Shipley, Inc., York, Pa.

Horizontal Rotary Cup

Caloroil Burner Corp., Hartford, Conn.
Eds-Wil Burner Corp., Chicago, Ill.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Iron Fireman Mfg. Co., Cleveland, Ohio
Johnson Co., S. T., Oakland, Calif.
Lancaster Heat Transfer Co., Inc., Brooklyn 1, N.Y.
Macleod Co., Cincinnati 22, Ohio
National Oil Burner Co. of New York, Inc., Brooklyn 17, N.Y.
Pacific Oil Co., Fall River, Mass.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Silent Glow Oil Corp., Hartford 6, Conn.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Staffco Eng. Co., Chicago 38, Ill.
Todd Shipyards Corp., Elmhurst, N.Y.
York-Shipley, Inc., York, Pa.

Low Pressure, Gun

Airflame, Inc., Waukegan, Ill.
Auburn Burner Co., Auburn, Ind.
Campbell Machine Co., Minneapolis, Minn.
Carlton Oil Burner Co., Hartford 3, Conn.
Cleaver-Brooks Co., Milwaukee 12, Wisc.
Combustioneer Div., Springfield, Ohio
Domestic Mfg. Co., Seattle, Wash.
Engineer Co., The, New York 6, N.Y.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Hart Heat Div., Peoria 2, Ill.
Jackson & Church Co., Saginaw, Mich.
Kinsley Burner & Machine Co., Providence, R.I.
Macleod Co., Cincinnati 22, Ohio
Marietta Metal Prods. Corp., Marietta, Ohio
Marnis Oil Co., Inc., New York 51, N.Y.
Metromatic Mfg. Co., Everett 49, Mass.
O'Halloran Industries, Detroit 4, Mich.
Pacific Oil Co., Fall River, Mass.
Portmor Boiler Co., Inc., Brooklyn, N.Y.
Safety Prods. Co., Brockton, Mass.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Scott-Newcomb, Inc., St. Louis 19, Mo.
Todd Shipyards Corp., Elmhurst, N.Y.
U. S. Machine Div., Lebanon, Ind.
Utica Rad. Corp., Utica, N.Y.
Viking Mfg. Corp., Cleveland 14, Ohio
Weatherall Eng. Inc., Providence, R.I.
Williams Div., Bloomington, Ill.

Pot, Vaporizing

Allen Mfg. Co., Nashville 1, Tenn.
Barridon Oil Burner Corp., Hartford, Conn.
Beyer Oil Burner Co., Rosamond, Calif.
Boston Machine Works Co., Lynn, Mass.
Brandenburg Industries, Inc., Baltimore 9, Md.
Breese Burners, Inc., Santa Fe, N.M.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Cary Mfg. Co., Waupaca, Wisc.
Century Eng. Corp., Cedar Rapids, Iowa
Chandler Co., Cedar Rapids, Iowa
Crane Co., Chicago 5, Ill.
Delco Appliance Div., Rochester, N.Y.
Domestic Mfg. Co., Seattle, Wash.
Duo-Therm Div., Lansing 3, Mich.
Faultless Oil Burner Co., St. Albans, L.I., N.Y.
Hall-Neal Furnace Co., Indianapolis, Ind.
Holland Furnace Co., Holland, Mich.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Kleer Kleen Mfg. Co., Oakland, Calif.
Kresky Mfg. Co., Inc., Petalum, Calif.
Laco Oil Burner Co., Inc., Griswold, Ind.
Little Burner Co., Inc., San Rafael, Calif.
Lonergan Mfg. Co., Albion, Mich.
Mason Machine Co., Inc., York, Pa.
Meyer Furnace Co., Peoria 2, Ill.
Michigan Burner Co., Detroit 28, Mich.
Miller Co., The, Meriden, Conn.
Norge Heat Div., Kalamazoo, Mich.
Northwest Metal Mfg. Co., Mitchell, S.D.
Northwest Metal Prods. Inc., Seattle 4, Wash.
Oran Co., Columbus, Ohio
Prentiss Wabers Prods. Co., Brockton, Mass.
Quaker Mfg. Co., Chicago 10, Ill.
Reliance Prods. Corp., Portland 14, Ore.
Safety Prods. Co., Brockton, Mass.
Sam-Bee Oil Burner Co., Centralia, Ill.
Siegler Enamel Range Co., Centralia, Ill.
Silent Sioux Corp., Orange City, Iowa
Smith's Htg., Inc., Kinston, N.C.
Standard Utilities Corp., Newark 5, N.J.
Sunland Refining Corp., Fresno, Calif.
Super Oil Heater Co., Hartford, Conn.
Sure Heat Stove Co., Plano, Texas
Therm Gas Generator Co., Inc., Seattle, Wash.
Trenton Htg. Mfg. Co., Trenton, Mich.

Shell, Vaporizing

Alasco Burner Co., Inc., Wincehondon, Mass.
Anchor Div., New Albany, Ind.
Automatic Burner Corp., Chicago 12, Ill.
Barridon Oil Burner Corp., Hartford, Conn.
Bland Burner Co., Hartford, Conn.
Caloroil Burner Corp., Hartford, Conn.
Carlton Oil Burner Co., Hartford 3, Conn.
Florence Stove Co., Gardner, Mass.
Gem Giant Oil Burner Co., Inc., Westmoreland, N.Y.
Hillier's Oil Htg. Co., Lodi, Wisc.
Kinsley Burner & Machine Co., Providence, R.I.
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Lynn Prods. Co., Lynn, Mass.
Metro Oil Burner Mfg. Co., Inc., Easthampton, Mass.
O'Halloran Industries, Detroit 4, Mich.
Pacific Oil Co., Fall River, Mass.
Pilgrim Oil Burner Co., Hartford, Conn.
Safety Blue Flame Oil Burner Mfg. Co., Brockton, Mass.
Silent Glow Oil Corp., Hartford 6, Conn.
Super Oil Heater Co., Hartford, Conn.
Victor Oil Burner Mfg. Co., Hartford, Conn.
Winston Co., Inc., Newark, N.J.

Wall—Flame Vertical Rotary

Crown Petroleum Corp., Hartford, Conn.
Fluid Heat Div., Baltimore 24, Md.
O'Halloran Industries, Detroit 4, Mich.
Pacific Oil Co., Fall River, Mass.
Safety Prods. Co., Brockton, Mass.
Timken Silent Automatic Div., Jackson, Mich.
Toridheet Div., Cleveland 2, Ohio
Viking Oil Co., Milwaukee, Wisc.

Oilburners, Commercial

Combination Oil-Gas Burners

Mettler Co., Inc., The, Los Angeles 63, Calif.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Synchronous Flame, Inc., Chicago 4, Ill.

High Pressure, Gun

Airflame, Inc., Waukegan, Ill.
Aldrich Co., Wyoming, Ill.
Allied Eng. Co., Allston 34, Mass.
American Mohawk Co., Inc., New York 14, N.Y.
Anchor Div., New Albany, Ind.
Anthony Co., Long Island City 1, N.Y.
Armstrong Furnace Co., Columbus 12, Ohio
Aston Prods. Inc., Hazel Park, Mich.

Atlas Mfg. Corp., Brooklyn, N.Y.
Auburn Burner Co., Auburn, Ind.
Automatic Burner Corp., Chicago 12, Ill.
Beckett Corp., R. W., Elyria, Ohio
Bethlehem F'dry. & Machine Co., Bethlehem, Pa.
Bettendorf Oil Burner Co., Marshalltown, Iowa
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Carlin Co., Wethersfield, Conn.
Century Eng. Corp., Cedar Rapids, Iowa
Chalmers Oil Burner Co., Minneapolis, Minn.
Chandler Co., Cedar Rapids, Iowa
Columbia Boiler Co., Pottstown, Pa.
Connelley Co., St. Louis 3, Mo.
Crane Co., Chicago 40, Ill.
Delco Appliance Div., Rochester, N.Y.
Delta Htg. Corp., Trenton 8, N.J.
Diamond Iron Works, Inc., Minneapolis 11, Minn.
Diesel Oil Burner Corp. of N.Y., Jamaica 5, N.Y.
Eckhart Mfg. Co., Inc., Union, N.J.
Eclipse Fuel Eng. Co., Rockford, Ill.
Electric Furnace-Man, Inc., Emmaus, Pa.
Electrol Burner Mfg. Co., Inc., Rutherford, N.J.
Ex Cel Co., Dowagiac, Mich.
Fairfield Oil Htg. Co., Inc., Greenwich, Conn.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Fluid Heat Div., Baltimore 24, Md.
Fuel Savers, Inc., Harrisburg, Pa.
General Machine Co., Inc., Emmaus, Pa.
General Oil Htg. Corp., W. New York, N.J.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Granberg Corp., Oakland, Calif.
Greene & Hodgson, Inc., Providence 5, R.I.
Greenwood Eng. Co., Inc., Baltimore 30, Md.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Hart Heat Div., Peoria, Ill.
Hayward Mfg. Co., Inc., Brooklyn 31, N.Y.
Heet-Master Prod. Co., Baltimore 18, Md.
Herco Oil Burner Corp., Lancaster, Pa.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Jackson & Church Co., Saginaw, Mich.
Johnson Co., S. T., Oakland, Calif.
Kleen Heet, Inc., Chicago 12, Ill.
Kol-Master Corp., Oregon, Ill.
Ko-Z-Aire Prods., Inc., Red Oak, Iowa
Laco Oil Burner Co., Inc., Griswold, Iowa
Lennox Furnace Co., Marshalltown, Iowa
Lynn Prods. Co., Lynn, Mass.
Madsen Service, Minneapolis, Minn.
Malleable Iron Fittings Co., Branford, Conn.
MarCoil Heater Co., Union City, N.J.
Marietta Metal Prods. Corp., Marietta, Pa.
Messer Co., Inc., The, Newark 7, N.J.
Mettler Co., Inc., The, Los Angeles 63, Calif.
Meyer Furnace Co., Peoria 2, Ill.
Modern Heat, Inc., Philadelphia 4, Pa.
Montag Stove & Furnace Works, Portland 17, Ore.
Mt. Hawley Mfg. Co., Peoria 4, Ill.
Norge Heat Div., Kalamazoo, Mich.
North American Mfg. Co., The, Cleveland 5, Ohio
Norwalk Airconditioning Corp., The, So. Norwalk, Conn.
Nu-Way Corp., The, Rock Island, Ill.
O'Halloran Industries, Detroit 4, Mich.
Oil-Elec-Tric Co., St. Paul 4, Minn.
Oil Eqpt. Laboratories, Inc., Elizabeth, N.J.
Paragon Oil Burner Corp., Brooklyn 22, N.Y.
Peabody Eng. Corp., New York 36, N.Y.
Petro, Cleveland 11, Ohio
Petrol Oil Burner Mfg. Co., Inc., Malden 48, Mass.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Premier Furnace Co., Dowagiac, Mich.
Quiet Automatic Burner Corp., Newark 4, N.J.
Quiet Heet Mfg. Corp., Newark 5, N.J.
Radiant Utilities Corp., Brooklyn 14, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Rayfield Co., C. L., Chicago 8, Ill.
Red Wing Oil Burner Co., Medford, Mass.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Rockwell Co., W. S., Fairfield, Conn.
Ronci Machine Co., Centredale 11, R.I.
Russo Inc., Thomas D., Boston 31, Mass.
S. K. Co., Inc., The, Camden, N.J.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Siemon Mfg. Co., Kansas City 8, Mo.
Silent Flame Mfg. Co., Inc., New York 72, N.Y.
Silent Glow Oil Corp., Hartford 6, Conn.
Standard Arcoil Corp., Newark 8, N.J.
Stewart Oil Burner Co., Hanover, Pa.
Sun-Ray Burner Mfg. Corp., Jamaica, N.Y.
Synchronous Flame, Inc., Chicago 4, Ill.
Thatcher Furnace Co., Garwood, N.J.
Todd Shipyards Corp., Elmhurst, N.Y.
Toridheet Div., Cleveland 2, Ohio
Tru-Heet Co., Trenton, N.J.
Twin Control Burner Mfg. Co., New York 67, N.Y.
U. S. Machine Div., Lebanon, Ind.
Viking Oil Co., Milwaukee, Wisc.
Volcano Burner Corp., New York 61, N.Y.
Waltham Oil Burner Co., E. Boston, Mass.
Wayne Home Eqpt. Co., Inc., Ft. Wayne 4, Ind.
Weatherall Eng., Inc., Providence, R.I.
Will-Bert Co., The, Orrville, Ohio
Williams Div., Bloomington, Ill.
Winston Co., Inc., Newark, N.J.
Wisconsin Oil Burner Co., Madison 5, Wisc.
Zink Co., John, Tulsa, Okla.

Horizontal Rotary Cup

Ace Eng. Co., Chicago 8, Ill.
Chalmers Oil Burner Co., Minneapolis, Minn.
Enterprise Engine & Machine Co., San Francisco 10, Calif.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Johnson Co., S. T., Oakland, Calif.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
National Oil Burner Co. of N.Y., Inc., Brooklyn, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Staffco Eng. Co., Chicago 38, Ill.
Superior Combustion Industries, Inc., New York, N.Y.
Todd Shipyards Corp., Elmhurst, N.Y.
York-Shipley, Inc., York, Pa.

Low Pressure, Gun

Airflame, Inc., Waukegan, Ill.
Anthony Co., Long Island City 1, N.Y.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Jackson & Church Co., Saginaw, Mich.
Mettler Co., Inc., The, Los Angeles 63, Calif.
O'Halloran Industries, Detroit 4, Mich.
Peabody Eng. Corp., New York 36, N.Y.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Rockwell Co., W. S., Fairfield, Conn.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
U. S. Machine Div., Lebanon, Ind.
Weatherall Eng. Inc., Providence, R.I.
Williams Div., Bloomington, Ill.

Oilburners, Residual

Combination Oil—Gasburners

Ace Eng. Co., Chicago 8, Ill.
Lundt, Inc., Ernest, Little Falls, N.J.
Staffco Eng. Co., Chicago 38, Ill.
Todd Shipyards Corp., Elmhurst, N.Y.

Horizontal Rotary Cup, Air-Driven

Fano-Flame Oil Burner Co., Huntington Park, Calif.
Johnston Bros., Inc., Ferrysburg, Mich.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
National Airoil Burner Co., Inc., Philadelphia 34, Pa.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.

Horizontal Rotary Cup, Motor-Driven

Ace Eng. Co., Chicago 8, Ill.
Best Combustion Eqpt. Co., Inc., W. N., Carlstadt, N.J.
Chalmers Oil Burner Co., Minneapolis, Minn.
Eds-Wil Burner Corp., Chicago, Ill.
Enterprise Engine & Machine Co., San Francisco 10, Calif.
Esso Standard Oil Co., New York 19, N.Y.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Johnson Co., S. T., Oakland, Calif.
Johnston Bros., Inc., Ferrysburg, Mich.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
National Airoil Burner Co., Inc., Philadelphia 34, Pa.
National Oil Burner Co. of N.Y., Inc., Brooklyn, N.Y.
Petro, Cleveland 11, Ohio
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.

Rayfield Co., C. L., Chicago 8, Ill.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Silver Heat Oil Burner Co., W. Philadelphia 43, Pa.
Staffco Eng. Co., Chicago 38, Ill.
Steel Prods., Inc., W. Haven, Conn.
Superior Combustion Industries, Inc., New York, N.Y.
Thatcher Furnace Co., Garwood, N.J.
Todd Shipyards Corp., Elmhurst, N.Y.
Westchester Home Eqpt. Co., Inc., New York, N.Y.
Williams Bros. & Miller, Inc., E. Chicago, Ind.
York-Shipley, Inc., York, Pa.

Horizontal Rotary Cup, Steam-Driven

Best Combustion Eqpt. Co., Inc., W. N., Carlstadt, N.J.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
National Airoil Burner Co., Inc., Philadelphia 34, Pa.
Ray Oil Burner Co., San Francisco 12, Calif.

Steam or Air Atomizing

Anthony Co., Long Island City 1, N.Y.
Best Combustion Eqpt. Co., Inc., W. N., Carlstadt, N.J.
Billow Corp., Chicago 6, Ill.
Cleaver-Brooks Co., Milwaukee 12, Wisc.
Coppus Eng. Corp., Worcester 2, Mass.
Eclipse Fuel Eng. Co., Rockford, Ill.
Engineer Co., The, New York 3, N.Y.
Faber Eng. Co., Inc., Philadelphia, Pa.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Federal Oil Burner Co., Inc., Philadelphia 4, Pa.
Gem Industrial Oil Burners, Frankfort, Ky.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Lammert & Mann Co., Chicago 12, Ill.
Leahy Mfg. Co., Los Angeles 21, Calif.
Lientz & Co., B. P., Kansas City 42, Mo.
Maxon Premix Burner Co., Muncie, Ind.
Mettler Co., Inc., The, Los Angeles 63, Calif.
National Airoil Burner Co., Inc., Philadelphia 34, Pa.
North American Mfg. Co., The, Cleveland 5, Ohio
Orr & Sembower, Inc., Reading, Pa.
Peabody Eng. Corp., New York 36, N.Y.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Rockwell Co., W. S., Fairfield, Conn.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Staples & Pfeiffer, San Francisco 7, Calif.
Todd Shipyards Corp., Elmhurst, N.Y.
Webster Eng. Co., Tulsa, Okla.
Wilgus Mfg. Co., Los Angeles 21, Calif.
Woolley Co., E. L., Pawtucket, R.I.
Zink Co., John, Tulsa, Okla.

Vaporizing (Gas Generator)

Vapofier Corp., Chicago 43, Ill.

Oil Delivery

Automatic Systems

Bowser, Inc., Ft. Wayne, Ind.
Degree Day Systems, Woodside, N.Y.
Hidy & Co., Elmo D., Cincinnati 36, Ohio
Measurement Methods Co., Evanston, Ill.

Emergency Valves

Betts Machine Co., Warren, Pa.

Hose

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Bowser, Inc., Ft. Wayne, Ind.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Carlyle Rubber Co., Inc., New York 7, N.Y.
Electric Hose & Rubber, Wilmington 99, Del.
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Goodall Rubber Co., Trenton 4, N.J.
Goodrich Co., B. F., Akron, Ohio
Goodyear Tire & Rubber Co., Akron, Ohio
Hamilton Rubber Mfg. Corp., Trenton 3, N.J.
Hewitt-Robins, Inc., Stamford, Conn.
International Metal Hose Co., Cleveland 3, Ohio
Metal Hose & Tubing Co., Dover, N.J.
U. S. Rubber Co., New York 20, N.Y.

Hose Line Couplings

Mead Cornell & Co., Cleveland 7, Ohio

Hose Nozzles

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Bowser, Inc., Ft. Wayne, Ind.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Scully Signal Co., Cambridge 4, Mass. (Spouts)

Hose Reels, Hand

Ardmore Prods. Div., Chicago 12, Ill.
Bowser, Inc., Ft. Wayne, Ind.
Columbian Steel Tank Co., Kansas City 1, Mo.
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Hannay & Son, Inc., Clifford B., Westerlo, N.Y.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.

Hose Reels, Power

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Ardmore Prods. Div., Chicago 12, Ill.
Bowser, Inc., Ft. Wayne, Ind.
Columbian Steel Tank Co., Kansas City 1, Mo.
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Hannay & Son, Inc., Clifford B., Westerlo, N.Y.
Peerless Trailer & Truck Service, Inc., Portland 14, Ore.
Power Reels, Inc., Buffalo 22, N.Y.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Wishman Co., R. H., Buffalo 9, N.Y.

Loaders, Tank Truck

Oil Eqpt. Mfg. Co., Inc., Louisville 11, Ky.

Loading Rack Equipment

Wheaton Brass Works, Union, N.J.

Manifold Valves

Betts Machine Co., Warren, Pa.
Milwaukee Valve Co., Milwaukee 7, Wisc.

Meters

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Bowser, Inc., Ft. Wayne, Ind.
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Gould Oil Burner Co., Boston, Mass.
Neptune Meter Co., New York 20, N.Y.
Rockwell Mfg. Co., Pittsburgh, Pa.
Smith Corp., A. O., Los Angeles 22, Calif.

Motor Control at Nozzle

Scully Signal Co., Cambridge 4, Mass.

Power Take-Offs

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Bowser, Inc., Ft. Wayne, Ind.
Chelsea Prods., Inc., Chelsea, Mich.
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Stow Mfg. Co., Binghamton, N.Y.

Throttle Control

Scully Signal Co., Cambridge 4, Mass.

Ticket Printers

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Bowser, Inc., Ft. Wayne, Ind.
Neptune Meter Co., New York 20, N.Y.
Smith Corp., A. O., Los Angeles 22, Calif.

Tight Connections

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Gasoilair Eqpt. Co., New Haven, Conn.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Scully Signal Co., Cambridge 4, Mass.

Truck Axles

Eaton Mfg. Co., Cleveland 10, Ohio
Trucksteil Co.. The, Cleveland, Ohio

Truck Chassis

Autocar Co., Ardmore, Pa.
Chevrolet Motor Div., Detroit 2, Mich.
Dodge Div., Detroit 31, Mich.
Ford Div., Dearborn, Mich.
G.M.C. Truck & Coach Div., Pontiac 11, Mich.
Mack Motor Truck Corp., New York 1, N.Y.
Reo Motors, Inc., Lansing, Mich.
White Motor Co., Cleveland 1, Ohio

Truck Tanks

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Billings, Inc., Bronx 59, N.Y.
Brown Steel Tank Co., Minneapolis 14, Minn.
Butler Mfg. Co., Kansas City 26, Mo.
Columbian Steel Tank Co., Kansas City 1, Mo.
D. & C. Eqpt. Co., Hartford 1, Conn.
Decker Bros., Hawthorne, N.J.
Farrell Mfg. Co., Joliet, Ill.
Fruehauf Trailer Co., Detroit 32, Mich.
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Heil Co., The, Milwaukee 1, Wisc.

Peerless Trailer & Truck Service, Inc., Portland 14, Ore.
Pennsylvania Furnace & Iron Co., Warren, Pa.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Sharpsville Steel Fabricators, Inc., Sharpsville, Pa.
Southern Tank & Mfg. Co., Owensboro, Ky.
Trailmobile Co., Cincinnati, Ohio
Triangle Tank Div., Inc., Brooklyn 22, N.Y.

Paint

Touch Up

Champion Bronze Powder & Paint Co., Chicago 12, Ill.
Minit Spray Corp., Chicago 54, Ill.
Sheffield Bronze Paint Corp., Cleveland 9, Ohio

Panels

Electric Heating

Appleman Glass Works, Bergenfield, N.J.
Continental Radiant Glass Htg., New York 16, N.Y.

Pipe & Fittings

Aluminum

Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Revere Copper & Brass, Inc., New York 17, N.Y.
Universal Brass Corp., Arlington, N.J.
Viking Mfg. Corp., Cleveland, Ohio
Wayne Brass Co., Inc., Ft. Wayne, Ind.

Brass

American Brass Co., Waterbury 20, Conn.
C-S Brass Mfg. Co., New York 23, N.Y.
Chase Brass & Copper Co., Waterbury 20, Conn.
Couplings Co., Chicago 16, Ill.
Crane Co., Chicago 40, Ill.
Grinnell Co., Inc., Providence 1, R.I.
Leggitt Co., S. H., Marshall, Mich.
Reliance Tubular Prods. Co., Cleveland 8, Ohio
Revere Copper & Brass, Inc., New York 17, N.Y.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Wayne Brass Co., Inc., Ft. Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio

Cast Iron

Crane Co., Chicago 40, Ill.
Grinnell Co., Inc., Providence 1, R.I.
Mel Gauge Co., E. Haven, Conn.
O'Halloran Industries, Detroit 4, Mich.

Copper Tube, Flexible

American Brass Co., Waterbury 20, Conn.
Couplings Co., Chicago 16, Ill.
Grinnell Co., Inc., Providence 1, R.I.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Leggitt Co., S. H., Marshall, Mich.
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Revere Copper & Brass, Inc., New York 17, N.Y.
Universal Brass Corp., Arlington, N.J.
Wayne Brass Co., Inc., Ft. Wayne, Ind.

Copper Tube, Rigid

American Brass Co., Waterbury 20, Conn.
Chase Brass & Copper Co., Waterbury 20, Conn.
Grinnell Co., Inc., Providence 1, R.I.
Leggitt Co., S. H., Marshall, Mich.
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Revere Copper & Brass, Inc., New York 17, N.Y.
Wayne Brass Co., Inc., Ft. Wayne, Ind.

Covering

Armstrong Cork Co., Lancaster, Pa.
Johns-Manville Corp., New York 16, N.Y.

Insulation

Armstrong Cork Co., Lancaster, Pa.
Johns-Manville Corp., New York 16, N.Y.
Sall Mountain Co., Hamilton, Ohio
Zonolite Co., Chicago 3, Ill.

Joint Compound

Buckeye Iron & Brass Works, Dayton 1, Ohio
Crane Co., Chicago 40, Ill.
Crane Packing Co., Chicago 13, Ill.
Grinnell Co., Inc., Providence 1, R.I.
Hercules Chemical Co., Inc., New York 13, N.Y.
Johns-Manville Corp., New York 16, N.Y.
Lake Chemical Co., Chicago 12, Ill.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Rector Well Eqpt. Co., Inc., Houston 2, Texas
Sunshine Chemical Co., Inc., John, Chicago 6, Ill.

Steel

Capitol Mfg. & Supply Co., Columbus, Ohio
Crane Co., Chicago 40, Ill.
Excelsior Steel Furnace Co., The, Chicago 6, Ill.
Grinnell Co., Inc., Providence 1, R.I.
Wayne Brass Co., Inc., Ft. Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio

Wrought Iron

Grinnell Co., Inc., Providence 1, R.I.

Preheaters, Oil

Electric

Ace Eng. Co., Chicago 8, Ill.
Anthony Co., Long Island City 1, N.Y.
Billow Corp., Chicago 6, Ill.
Eclipse Fuel Eng. Co., Rockford, Ill.
Electro-Therm, Inc., Silver Spring, Md.
Falcon Eqpt. Co., New Brighton, Pa.
Fluid Systems, Inc., New Haven, Conn.
Instrument Laboratory, Inc., Seattle, Wash.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Staffco Eng. Co., Chicago 38, Ill.
Todd Shipyards Corp., Elmhurst, N.Y.
Trent, Inc., Philadelphia 27, Pa.
Vulcan Electric Co., Danvers, Mass.
Wiegand Co., Edwin L., Pittsburgh 8, Pa.
Woolley Co., E. L., Pawtucket, R.I.

Hot Water (Under the Water Line)

Alstrom Corp., New York 60, N.Y.
American Tube Prods., Inc., Natick, R.I.
Anthony Co., Long Island City 1, N.Y.
Bell & Gossett Co., Morton Grove, Ill.
Bernstrom, Inc., C. R., Providence, R.I.
Chalmers Oil Burner Co., Minneapolis, Minn.
Davis Eng. Corp., New York 33, N.Y.
General Fittings Co., Providence 5, R.I.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
Manning & Lewis Eng. Co., Newark 4, N.J.
Patterson-Kelley Co., Inc., The, E. Stroudsburg, Pa.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Rempe Co., Chicago 12, Ill.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Staffco Eng. Co., Chicago 38, Ill.
Superior Combustion Industries, Inc., New York, N.Y.
Taco Heaters, Inc., Providence, R.I.
Water Tube Boiler & Tank Co., Chicago, Ill.
Yula Water Heaters, Inc., New York 63, N.Y.

Jacketed Pipe & Fittings

Parks-Cramer Co., Fitchburg, Mass.

Non-Contaminating

Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.

Pipeline Resistance

Falcon Eqpt. Co., New Brighton, Pa.
Fluid Systems, Inc., New Haven, Conn.

Steam, High Pressure

Alstrom Corp., New York 60, N.Y.
Anthony Co., Long Island City 1, N.Y.
Billow Corp., Chicago 6, Ill.
Davis Eng. Corp., New York 33, N.Y.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Johnson Corp., The, Three Rivers, Mich.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
Leahy Mfg. Co., Los Angeles 21, Calif.
Lientz & Co., B. P., Kansas City 42, Mo.
Manning & Lewis Eng. Co., Newark 4, N.J.
Patterson-Kelley Co., Inc., The, E. Stroudsburg, Pa.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Staffco Eng. Co., Chicago 38, Ill.
Staples & Pfeiffer, San Francisco 7, Calif.
Superior Combustion Industries, Inc., New York, N.Y.
Water Tube Boiler & Tank Co., Chicago, Ill.
Yula Water Heaters, Inc., New York 63, N.Y.

Steam, Low Pressure

Alstrom Corp., New York 60, N.Y.
Anthony Co., Long Island City 1, N.Y.
Bernstrom, Inc., C. R., Providence, R.I.

Davis Eng. Corp., New York 33, N.Y.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
B. P. Lientz & Co., Kansas City 42, Mo.
Manning & Lewis Eng. Co., Newark 4, N.J.
Patterson-Kelley Co., Inc., The, E. Stroudsburg, Pa.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co,, San Francisco 12, Calif.
Rempe Co., Chicago 12, Ill.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Staffco Eng. Co., Chicago 38, Ill.
Staples & Pfeiffer, San Francisco 7, Calif.
Superior Combustion Industries, Inc., New York, N.Y.
Taco Heaters, Inc., Providence, R.I.
Water Tube Boiler & Tank Co., Chicago, Ill.
Yula Water Heaters, Inc., New York 63, N.Y.

Printed Forms

Billheads

Bradford Price Book, Quincy 69, Mass.
Cromwell Printers, Inc., Albany, N.Y.
Degree Day Systems, Woodside, N.Y.
Standard Register Co., The, Dayton 1, Ohio

Budget Payment Envelopes

Wassel Organization, Inc., Westport, Conn.

Decalcomanias

Degree Day Systems, Woodside, N.Y.
Thatcher Furnace Co., Garwood, N.J.
Williamson Heater Co., The, Cincinnati 9, Ohio

Degree-Day Cards

Degree Day Systems, Woodside, N.Y.
Measurement Methods Co., Evanston, Ill.

Degree-Day Indexes

Degree Day Systems, Woodside, N.Y.
Measurement Methods Co., Evanston, Ill.

Delivery Tickets

Cromwell Printers, Inc., Albany, N.Y.
Degree Day Systems, Woodside, N.Y.
Hano Co., Inc., Philip, New York 1, N.Y.
Moore Business Forms, Niagara Falls, N.Y.

Door Knob Notice Cards

Degree Day Systems, Woodside, N.Y.

Drivers' Daily Reports

Cromwell Printers, Inc., Albany, N.Y.
Degree Day Systems, Woodside, N.Y.

Fueloil Order Forms

Cromwell Printers, Inc., Albany, N.Y.
Degree Day Systems, Woodside, N.Y.
Standard Register Co., The, Dayton 1, Ohio

Oilburner Instruction Cards

Degree Day Systems, Woodside, New York

Oilburner Service Order Forms

Degree Day Systems, Woodside, N.Y.

Oilburner Service Record Cards

Degree Day Systems, Woodside, N.Y.

Oilburner Service Tickets

Cromwell Printers, Inc., Albany, N.Y.
Degree Day Systems, Woodside, N.Y.

Price Charts

Degree Day Systems, Woodside, N.Y.
Taco Heaters, Inc., Providence, R.I.

Statements

Bradford Price Book, Quincy 69, Mass.
Cromwell Printers, Inc., Albany, N.Y.
Degree Day Systems, Woodside, N.Y.
Standard Register Co., The, Dayton 1, Ohio

Tank Capacity Charts

Cromwell Printers, Inc., Albany, N.Y.
Degree Day Systems, Woodside, N.Y.

Ticket Holders

Cromwell Printers, Inc., Albany, N.Y.
Degree Day Systems, Woodside, N.Y.

Pumps

Boiler Feed

Allis Chalmers Mfg. Co., Milwaukee 1, Wisc.
De Laval Steam Turbine Co., Trenton 2, N.J.
Eclipse Fuel Eng. Co., Rockford, Ill.
Economy Pumps, Inc., Philadelphia 32, Pa.
Ingelsoll-Rand Co., New York 4, N.Y.
Johnson Corp., The, Three Rivers, Mich.
Lattner Mfg. Co., P.M., Cedar Rapids, Iowa
Skidmore Corp., St. Joseph, Mich.
Stewart Oil Burner Co., Hanover, Pa.

Bulkplants

Allis-Chalmers Mfg. Co., Milwaukee 1, Wisc.
Blackmer Pump Co., Grand Rapids, Mich.
Bowser, Inc., Ft. Wayne, Ind.
Carver Pump Co., Muscatine, Iowa
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Gorman-Rupp Co., The, Mansfield, Ohio
Ingersoll-Rand Co., New York 4, N.Y.
Kraissl Co., The, Hackensack, N.J.
Marlow Pumps, Ridgewood, N.J.
Schirmer Dornbirer Pump Co., Cleveland 14, Ohio
Viking Pump Co., Cedar Falls, Iowa

Fuel Unit

Eclipse Fuel Eng. Co., Rockford, Ill.
Kraissl Co., The, Hackensack, N.J.
Ray Oil Burner Co., San Francisco 12, Calif.
Schirmer Dornbrier Pump Co., Cleveland 14, Ohio
Schurs Oil Burner Co., Los Angeles 1, Calif.
Staffco Eng. Co., Chicago 38, Ill.
Sundstrand Machine Tool Co., Rockford, Ill.
Tuthill Pump Co., Chicago 19, Ill.
Viking Pump Co., Cedar Falls, Iowa
Webster Electric Co., Racine, Wisc.

Oil Circulating Unit

Drying Systems Inc., Chicago 40, Ill.

Oil, Lift

A-P Controls Corp., Milwaukee, Wisc.
Autopulse Corp., Ludington, Mich.
Carver Pump Co., Muscatine, Iowa
De Laval Steam Turbine Co., Trenton 2, N.J.
Gorman-Rupp Co., The, Mansfield, Ohio
Pentwater Machinery Co., Pentwater, Mich.
Schirmer Dornbirer Pump Co., Cleveland 14, Ohio
Therm Gas Generator Co., Inc., Seattle, Wash.
Viking Pump Co., Cedal Falls, Iowa

Oil, Wall

Autopulse Corp., Ludington, Mich.
Pentwater Machinery Co., Pentwater, Mich.
Viking Pump Co., Cedar Falls, Iowa

Oilburner

De Laval Steam Turbine Co., Trenton 2, N.J.
HomEase Prods. Div., Inc., Paterson, N.J.
Illinois Iron & Bolt Co., Carpentersville, Ill.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Kraissl Co., The, Hackensack, N.J.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Roper Corp., Geo. D., Rockford, Ill.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Simplex Oil Htg. Corp., Philadelphia 11, Pa.
Sundstrand Machine Tool Co., Rockford, Ill.
Tuthill Pump Co., Chicago 19, Ill.
Viking Pump Co., Cedar Falls, Iowa

Sets, Heavy Oil

Ace Eng. Co., Chicago 8, Ill.
Billow Corp., Chicago 6, Ill.
Eclipse Fuel Eng. Co., Rockford, Ill.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Kraissl Co., The, Hackensack, N.J.
Lancaster Heat Transfer Co., Inc., Brooklyn, N.Y.
Lientz & Co., B.P., Kansas City 42, Mo.
National Oil Burner Co. of N.Y., Inc., Brooklyn, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Renneburg & Sons Co., Edw., Baltimore 24, Md.
Roper Corp., Geo. D., Rockford, Ill.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Staffco Eng. Co., Chicago 38, Ill.
Staples & Pfeiffer, San Francisco 7, Calif.
Tuthill Pump Co., Chicago 19, Ill.
Viking Pump Co., Cedar Falls, Iowa
Wilgus Mfg. Co., Los Angeles 21, Calif.
Woolley Co., E.L., Pawtucket, R.I.

Sump-Pumps

Silent Flame Mfg. Co., Inc., New York 72, N.Y.

Tank Truck

Blackmer Pump Co., Grand Rapids, Mich.
Bowser, Inc., Ft. Wayne, Ind.
Carver Pump Co., Muscatine, Iowa
Gasoline & Oil Eqpt. Co., New Haven, Conn.
Gorman-Rupp Co., The, Mansfield, Ohio
Gould Oil Burner Co., Boston, Mass.
Kraissl Co., The, Hackensack, N.J.
Marlow Pumps, Ridgewood, N.J.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Roper Corp., Geo. D., Rockford, Ill.
Schirmer Dornbrier Pump Co., Cleveland 14, Ohio
Viking Pump Co., Cedal Falls, Iowa
Yale & Towne Mfg. Co., Stamford, Conn.

Vacuum

Allis-Chalmers Mfg. Co., Milwaukee 1, Wisc.
Economy Pumps Inc., Philadelphia 32, Pa.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Ingersoll-Rand Co., New York 4, N.Y.
Kraissl Co., The, Hackensack, N.J.
National Steam Pump Co., Upper Sandusky, Ohio
Skidmore Corp., St. Joseph, Mich.
Sterling, Inc., Milwaukee 12, Wisc.

Water Circulating

Allis-Chalmers Mfg. Co., Milwaukee 1, Wisc.
Baseline Mfg. Corp., Minneapolis 23, Minn.
Bell & Gossett Co., Morton Grove, Ill.
Carver Pump Co., Muscatine, Iowa
De Laval Steam Turbine Co., Trenton 2, N.J.
Econo Prods Co., New York 4, N.Y.
Economy Pumps, Inc., Philadelphia 32, Pa.
Golden Flame Mfg. Co., Camden 3, N.J.
Gorman-Rupp Co., The, Mansfield, Ohio
Ingersoll-Rand Co., New York 4, N.Y.
Kraissl Co., The, Hackensack, N.J.
Magnaflow Pump Corp., New York 3, N.Y.
Piqua Machine & Mfg. Co., The, Piqua, Ohio
Taco Heaters, Inc., Providence, R.I.
Thrush & Co., H. A., Peru, Ind.
Trane Co., The, La Crosse, Wisc.
Triplex Htg. Specialty Co., Peru, Ind.

Radiators

Baseboard

Altherm, Inc., New York 21, N.Y.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Argo Co., Hartford 6, Conn.
Baseline Mfg. Corp., Minneapolis 23, Minn.
Berger Furnace Mfg. Co., Pittsburgh 6, Pa.
Brandenburg Industries, Inc., Baltimore 9, Md.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Brown Prods. Co., Forest Hills, N.Y.
Burnham Corp., Irvington, N.Y.
Bush Mfg. Co., Hartford, Conn.
Columbia Boiler Co., Pottstown, Pa.
Crane Co., Chicago 40, Ill.
Electriglas Corp., Bergenfield, N.J.
Fedders-Quigan Corp., Buffalo, N.Y.
Federal Engs., Inc., Barrington, R.I.
General Htg. Prods. Co., Philadelphia, Pa.
General Thriftmaster Prods., Philadelphia, Pa.
Kritzer Radiant Coils, Inc., Chicago 24, Ill.
National Radiator Co., The, Johnstown, Pa.
Nesbitt, Inc., John J., Philadelphia 36, Pa.
Radiant Baseboard Panels, Inc., New Britain, Conn.
Republic Prods. Co., Philadelphia 36, Pa.
Rittling Corp., Buffalo 3, N.Y.
Rome-Turney Radiator Co., Rome, N.Y.
Schemenauer Mfg. Co., Holland, Ohio
Slant-Fin Radiator Corp., Brooklyn, N.Y.
Stedco Prods., Kingston, Pa.
Sterling Radiator Co., Inc., Westfield, Mass.
Trane Co., The, La Crosse, Wisc.
Trico Baseboard Htg., Pompton Lakes, N.J.
Turbo-Ray, Inc., New Rochelle, N.Y.
U. S. Radiator Corp., Detroit 26, Mich.
Utica Radiator Corp., Utica, N.Y.
Valley Forge Metals Co., Lansdale, Pa.
Vulcan Radiator Co., Hartford 6, Conn.
Warren Webster & Co., Camden 5, N.J.
Weil-McLain Co., Michigan City, Ind.
Woodruff Thermo Prods., Inc., Fair Lawn, N.J.
York-Shipley, Inc., York, Pa.

Coils, Copper

Bush Mfg. Co., W. Hartford, Conn.
Kritzer Radiant Coils, Inc., Chicago 24, Ill.
Modine Mfg. Co., Racine, Wisc.
Rittling Corp., Buffalo 3, N.Y.
Trane Co., The, La Crosse, Wisc.
Young Rad. Co., Racine, Wisc.

Convectors, Copper

Airtherm Mfg. Co., St. Louis 10, Mo.
Altherm, Inc., New York 21, N.Y.
American Coils, Inc., Newark 5, N.J.
Auto Rad. Specialty Co., Chicago 24, Ill.
Brandenburg Industries, Inc., Baltimore 9, Md.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Brown Prods. Co., Forest Hills, N.Y.
Bush Mfg. Co., W. Hartford, Conn.
Federal Engs., Inc., Barrington, R.I.
General Htg. Prods. Co., Philadelphia, Pa.
Modine Mfg. Co., Racine, Wisc.
National Radiator Co., The, Johnstown, Pa.
Nesbitt, Inc., John J., Philadelphia, Pa.
Penn Boiler & Burner Mfg. Corp., Lancaster, Pa.
Republic Prods. Co., Philadelphia 36, Pa.
Rittling Corp., Buffalo 3, N.Y.
Rome-Turney Rad. Co., Rome, N.Y.
Trane Co., The, La Crosse, Wisc.
U. S. Rad. Corp., Detroit 26, Mich.
Young Rad. Co., Racine, Wisc.

Convectors, Iron

American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Fedders-Quigan Corp., Buffalo, N.Y.
National Rad. Co., The, Johnstown, Pa.
U. S. Rad. Corp., Detroit 26, Mich.

Electric Panels

Electriglas Corp., Bergenfield, N.J.

Extended Surface, Copper

American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Brandenburg Industries, Inc., Baltimore 9, Md.
Bush Mfg. Co., W. Hartford, Conn.
Kritzer Radiant Coils, Inc., Chicago 24, Ill.
Modine Mfg. Co., Racine, Wisc.
Nesbitt, Inc., John J., Philadelphia 36, Pa.
Rittling Corp., Buffalo 3, N.Y.
Rome-Turney Rad. Co., Rome, N.Y.
Slant-Fin Rad. Corp., Brooklyn, N.Y.
Trane Co., The, La Crosse, Wisc.

Extended Surface, Iron

Altherm, Inc., New York 21, N.Y.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Baseline Mfg. Corp., Minneapolis 23, Minn.
Brown Prods. Co., Forest Hills, N.Y.
Bush Mfg. Co., Hartford, Conn.
Kritzer Radiant Coils, Inc., Chicago 24, Ill.
Rittling Corp., Buffalo 3, N.Y.
Slant-Fin Rad. Corp., Brooklyn, N.Y.

Standing, Cast-Iron

Altherm, Inc., New York 21, N.Y.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Burnham Corp., Irvington, N.Y.
Crane Co., Chicago 40, Ill.
Dunkirk Rad. Corp., Dunkirk, N.Y.
National Rad. Co., The, Johnston, Pa.
U. S. Rad. Corp., Detroit 26, Mich.
Utica Rad. Corp., Utica, N.Y.
Weil-McLain Co., Michigan City, Ind.

Ranges, Oilfired

Commercial, Mechanical Oilburner

Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Washington Stove Works, Everett, Wash.

Commercial Pot Burner

Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Viking Mfg. Corp., Cleveland, Ohio
Washington Stove Works, Everett, Wash.

Domestic, Mechanical Oilburner

Knox Stove Works, Inc., Knoxville, Tenn.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Monarch Range Co., Beaver Dam, Wisc.
Staffco Eng. Co., Chicago 38, Ill.
Therm Gas Generator Co., Inc., Seattle, Wash.
Washington Stove Works, Everett, Wash.

Domestic, pot burner

Barridon Oil Burner Corp., Hartford, Conn.
Knox Stove Works, Inc., Knoxville, Tenn.
Kresky Mfg. Co., Inc., Petaluma, Calif.

Monarch Range Co., Beaver Dam, Wisc.
Montag Stove & Furnace Works, Portland 17, Ore.
Siegler Enamel Range Co., Centralia, Ill.
Therm Gas Generator Co., Inc., Seattle, Wash.
Washington Stove Works, Everett, Wash.

Domestic, Shell Burner

Barridon Oil Burner Corp., Hartford, Conn.
Dortch Stove Works, Inc., The, Franklin, Tenn.
Florence Stove Co., Gardner, Mass.

Refractories

Castable

Babcock & Wilcox Co., New York 17, N.Y.
Carolina Refractories Co., Hartsville, S.C.
Denver Fire Clay Co., The, Denver 17, Colo.
Gem Clay Forming Co., The, Sebring, Ohio
General Refractories Co., Philadelphia, Pa.
Harbison-Walker Refractories Co., Pittsburgh 22, Pa.
Insulating Refractories Co., San Rafael, Calif.
Iron-Hide Sales Co., Mataway, N.J.
Johns-Manville Corp., New York 16, N.Y.
Laclede-Christy Co., St. Louis 1, Mo.
Mexico Refractories Co., Mexico, Mo.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Plibrico Firebrick Co., Chicago 14, Ill.
Ramtite Co., Chicago, Ill.
Refractory & Insulation Corp., Port Kennedy, Pa.
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.
Walsh Refractories Corp., St. Louis 7, Mo.
Western Stove Lining Works, Mexico, Mo.

Cement

Armstrong Cork Co., Lancaster, Pa.
Babcock & Wilcox Co., New York 17, N.Y.
Carolina Refractories Co., Hartsville, S.C.
Clinton Metallic Paint Co., Clinton, N.Y.
Denver Fire Clay Co., The, Denver 17, Colo.
Gem Clay Forming Co., The, Sebring, Ohio
General Refractories Co., Philadelphia, Pa.
Grant Wilson Inc., Chicago 4, Ill.
Harbison-Walker Refractories Co., Pittsburgh 22, Pa.
Johns-Manville Corp., New York 16, N.Y.
Laclede-Christy Co., St. Louis 1, Mo.
Mexico Refractories Co., Mexico, Mo.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Plibrico Firebrick Co., Chicago 14, Ill.
Refractory & Insulation Corp., Port Kennedy, Pa.
Refractory Specialty Co., Philadelphia 46, Pa.
S. O. S. Prods. Co., Inc., Brooklyn 22, N.Y.
Sall Mountain Co., Hamilton, Ohio
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.
Walsh Refractories Corp., St. Louis 7, Mo.
Western Stove Lining Works, Mexico, Mo.
Zonolite Co., Chicago 3, Ill.

Chamber Back-Fill

General Refractories Co., Philadelphia, Pa.
Hyzer & Lewellen, Southampton, Pa.
Insulating Refractories Co., San Rafael, Calif.
Mexico Refractories Co., Mexico, Mo.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Refractory & Insulation Corp., Port Kennedy, Pa.
Rex Roto Corp., Detroit 6, Mich.
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.
Walsh Refractories Corp., St. Louis 7, Mo.
Zonolite Co., Chicago 3, Ill.

Fire Brick

Babcock & Wilcox Co., New York 17, N.Y.
Carolina Refractories Co., Hartville, S.C.
Denver Fire Clay Co., The, Denver 17, Colo.
General Refractories Co., Philadelphia, Pa.
Green Fire Block Co., A. P., Mexico, Mo.
Harbison-Walker Refractories Co., Pittsburgh 22, Pa.
Laclede-Christy Co., St. Louis 1, Mo.
MacLeod & Henry Co., Inc., Troy, N.Y.
Mexico Refractories Co., Mexico, Mo.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Plibrico Firebrick Co., Chicago 14, Ill.
Presbrey Refractories Corp., Taunton, Mass.
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.
Walsh Refractories Corp., St. Louis 7, Mo.
Western Stove Lining Works, Mexico, Mo.

Fire Brick, Insulating

Armstrong Cork Co., Lancaster, Pa.
Babcock & Wilcox Co., New York 17, N.Y.
Boston Machine Works Co., Lynn, Mass.
Denver Fire Clay Co., The, Denver 17, Colo.
Gem Clay Forming Co., The, Sebring, Ohio
General Refractories Co., Philadelphia, Pa.
Green Fire Block Co., A. P., Mexico, Mo.
Harbison-Walker Refractories Co., Pittsburgh 22, Pa.
Insulating Refractories Co., San Rafael, Calif.
Johns-Manville Corp., New York 16, N.Y.
MacLeod & Henry Co., Inc., Troy, N.Y.
Mexico Refractories Co., Mexico, Mo.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Plibrico Firebrick Co., Chicago 14, Ill.
Presbrey Refractories Corp., Taunton, Mass.
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.
Walsh Refractories Corp., St. Louis 7, Mo.
Zonolite Co., Chicago 3, Ill.

Fire Brick, Plastics

Mexico Refractories Co., Mexico, Mo.
Walsh Refractories Corp., St. Louis 7, Mo.

Firebox Baffles

American Clay Forming Co., Tiffin, Ohio
Bauer Oil Burner, Inc., Wilmington, Del.
Boston Machine Works Co., Lynn, Mass. (steel)
Carolina Refractories Co., Hartsville, S.C.
Denver Fire Clay Co., The, Denver 17, Colo.
General Refractories Co., Philadelphia, Pa.
Green Fire Block Co., A. P., Mexico, Mo.
Harbison-Walker Refractories Co., Pittsburgh 22, Pa.
Harvey, Inc., Sid., Valley Stream, N.Y.
Hyser & Lewellen, Southampton, Pa.
Insulating Refractories Co., San Rafael, Calif.
Insulation & Refractories Co., Williamson, N. Y. (steel)
Iron-Hide Sales Co., Matawan, N.J.
Mexico Refractories Co., Mexico, Mo.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Peterson, Co., A. B., Dowagiac, Mich.
Refractory & Insulation Corp., Port Kennedy, Pa.
Rex Clay Prods. Co., The, Detroit 6, Mich.
S. O. S. Prods Co., Inc., Brooklyn 22, N.Y.
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.
U. S. Machine Div., Lebanon, Ind.
Walsh Refractories Corp., St. Louis 7, Mo.
Western Stove Lining Works, Mexico, Mo.
Zeh Co., Inc., Passaic, N.J.

Pre-cast Combustion Chambers

American Clay Forming Co., Tiffin, Ohio
Armstrong Cork Co., Lancaster, Pa.
Bard Mfg. Co., Bryan, Ohio
Boston Machine Works Co., Lynn, Mass.
Carolina Refractories Co., Hartsville, S.C.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Gem Clay Forming Co., The, Sebring, Ohio
General Refractories Co., Philadelphia, Pa.
Green Fire Block Co., A. P., Mexico, Mo.
Harbison-Walker Refractories Co., Pittsburgh 22, Pa.
Harvey, Inc., Sid., Valley Stream, N.Y.
Hyser & Lewellen, Southampton, Pa.
Ingersoll Steel Div., Chicago 4, Ill. (steel)
Insulating Refractories Co., San Rafael, Calif.
Iron-Hide Sales Co., Matawan, N.J.
Kolb Refractories Co., Philadelphia 48, Pa.
Laclede-Christy Co., St. Louis 1, Mo.
Louthan Mfg. Co., The, E. Liverpool, Ohio
MacLeod & Henry Co., Inc., Troy, N.Y.
Mexico Refractories Co., Mexico, Mo.
Monogram Prods. Co., Inc., Philadelphia 4, Pa.
Nock Fire Brick Co., The, Cleveland 3, Ohio
Peterson Co., B. A., Dowagiac, Mich.
Presbrey Refractories Corp., Taunton, Mass.
Refractory & Insulation Corp., Port Kennedy, Pa.
Rex Clay Prods. Co., The, Detroit 6, Mich.
Rex Roto Corp., Detroit 6, Mich.
S. O. S. Prods. Co., Inc., Brooklyn 22, N.Y.
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.
U. S. Machine Div., Lebanon, Ind.
Walsh Refractories Corp., St. Louis 7, Mo.
Western Stove Lining Works, Mexico, Mo.

Reflective Paint

National Fuel Conservation Co., Inc., White Plains, N.Y.
Refractory & Insulation Corp., Port Kennedy, Pa.
S. O. S. Prods. Co., Inc., Brooklyn 22, N.Y.
Schlitt & Son, Inc., Joseph A., Jersey City 4, N.J.

Reflective Powder

Fuel Econ-O-mizer Co., Providence 5, R.I.

Stainless Steel Chambers

Sandberg Mfg. Co., Portland 10, Ore.
Stefco Steel Co., Michigan City, Ind.

Service Truck Bodies

Holan Co., J. H., Cleveland 11, Ohio
McCabe Powers Auto Body Co., St. Louis 15, Mo.
Stahl Metal Prods. Inc., Cleveland, Ohio

Signals

Liquid, Low Level

Diamond Power Specialty Corp., Lancaster, Ohio
Liquidepth Indicators, Inc., Long Island City 1, N.Y.
McDonnell & Miller, Inc., Chicago 18, Ill.
Magnetrol, Inc., Chicago 23, Ill.

Smoke

Diamond Power Specialty Corp., Lancaster, Ohio
General Power Plant Corp., Ossining, N.Y.
Heat Timer Corp., New York 12, N.Y.
Preferred Utilities Mfg. Corp., New York 23, N.Y.

Tank Fill

Magnetrol, Inc., Chicago 23, Ill.
Plastic Appliance Co., Philadelphia 31, Pa.
Scully Signal Co., Cambridge 4, Mass.

Space Heaters, Oilfired

Circulating, Pot Burner, Forced Circulation

Allen Mfg. Co., Nashville 1, Tenn.
American Gas Machine Co., Albert Lea, Minn.
Barridon Oil Burner Corp., Hartford, Conn.
Coleman Co., Inc., Wichita, Kans.
Delta Htg. Corp., Trenton 8, N.J.
Duo-Therm Div., Lansing 3, Mich.
Florence Stove Co., Gardner, Mass.
Gray & Dudley Co., Nashville, Tenn.
Htg. Eqpt. Mfg. Co., San Francisco, Calif.
International Oil Burner Co., St. Louis 10, Mo.
Knox Stove Works, Inc., Knoxville, Tenn.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Laco Oil Burner Co., Inc., Griswold, Iowa
Magic Chef, Inc., St. Louis 10, Mo.
Makomb Steel Prods. Co., Div., Macomb, Ill.
Monarch Range Co., Beaver Dam, Wisc.
Motor Wheel Corp., Lansing 3, Mich.
Prentiss Wabers Prods. Co., Wisconsin Rapids, Wisc.
Queen Stove Works, Inc., Albert Lea, Minn.
Quincy Stove Mfg. Co., The, Quincy, Ill.
Siegler Enamel Range Co., Centralia, Ill.
Silent Sioux Corp., Orange City, Iowa
Therm Gas Generator Co., Inc., Seattle, Wash.
United Stove Co., Ypsilanti, Mich.
Viking Mfg. Corp., Cleveland, Ohio
Washington Stove Works, Everett, Wash.

Circulating Pot Burner, Gravity Circulation

Allen Mfg. Co., Nashville 1, Tenn.
American Gas Machine Co., Albert Lea, Minn.
Barridon Oil Burner Corp., Hartford, Conn.
Beyer Oil Burner Co., Rosamond, Calif.
Carlton Oil Burner Co., Hartford 3, Conn.
Coleman Co., Inc., Wichita, Kan.
Delta Htg. Corp., Trenton 8, N.J.
Dortch Stove Works, Inc., The, Franklin, Tenn.
Duo-Therm Div., Lansing 3, Mich.
Florence Stove Co., Gardner, Mass.
Gray & Dudley Co., Nashville, Tenn.
Htg. Eqpt. Mfg. Co., San Francisco, Calif.
Knox Stove Works, Inc., Knoxville, Tenn.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Laco Oil Burner Co., Inc., Griswold, Iowa
Little Burner Co., Inc., H. C., San Rafael, Calif.
Lonergan Mfg. Co., Albion, Mich.
Magic Chef, Inc., St. Louis 10, Mo.
Makomb Steel Prods. Co., Div., Macomb, Ill.
Motor Wheel Corp., Lansing 3, Mich.
Oakland Fdry. Co., Belleville, Ill.
Prentiss Wabers Prods. Co., Wisconsin Rapids, Wisc.
Queen Stove Works, Inc., Albert Lea, Minn.
Quincy Stove Mfg. Co., The, Quincy, Ill.
Siegler Enamel Range Co., Centralia, Ill.
Silent Sioux Corp., Orange City, Iowa
Spark Stove Co., Inc., Oakland 1, Calif.
Therm Gas Generator Co., Inc., Seattle, Wash.
United Stove Co., Ypsilanti, Mich.
Viking Mfg. Corp., Cleveland, Ohio
Washington Stove Works, Everett, Wash.

Circulating, Shell Burner, Forced Circulation

American Gas Machine Co., Albert Lea, Minn.
Arcweld Mfg. Co., Inc., Seattle 9, Wash.
Barridon Oil Burner Corp., Hartford, Conn.
Carlton Oil Burner Co., Hartford 3, Conn.
Dravo Corp., Pittsburgh 22, Pa.
Florence Stove Co., Gardner, Mass.
Queen Stove Works, Inc., Albert Lea, Minn.

Circulating, Shell Burner, Gravity Circulation

American Gas Machine Co., Albert Lea, Minn.
Barridon Oil Burner Corp., Hartford, Conn.
Carlton Oil Burner Co., Hartford 3, Conn.
Florence Stove Co., Gardner, Mass.
Jungers Stove & Range Co., Grafton, Wisc.
Motor Wheel Corp., Lansing 3, Mich.
Oakland Fdry. Co., Belleville, Ill.
Queen Stove Works, Inc., Albert Lea, Minn.

Floor Furnaces

Altherm, Inc., New York 21, N.Y.
American Gas Machine Co., Albert Lea, Minn.
American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anchor Div., New Albany, Ind.
Beyer Oil Burner Co., Rosamond, Calif.
Bryand Heater Div., Cleveland, Ohio
Coleman Co., Inc., Wichita, Kan.
Conn. State Furnace Co., Inc., Bridgeport, Conn.
Crane Co., Chicago 40, Ill.
Delta Htg. Corp., Trenton 8, N.J.
Domestic Mfg. Co., Seattle, Wash.
Draco Furnace Co., Inc., Charlotte, N.C.
Electro-Watt Industries Inc., Salem, Ore.
Evans Prods., Plymouth, Mich.
Florence Stove Co., Gardner, Mass.
Gillen Co., J. L., Detroit 28, Mich.
Holly Mfg. Co., Pasadena, Calif.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Kleer-Kleen Mfg. Co., Oakland 3, Calif.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Lawson Mfg. Co., Pittsburgh 8, Pa.
Lennox Furnace Co., Marshalltown, Iowa
Little Burner Co., Inc., H. C., San Rafael, Calif.
Meyer Furnace Co., Peoria 2, Ill.
Mission Appliance Corp., Hawthorne, Calif.
Montag Stove & Furnace Works, Portland 17, Ore.
Northwest Metal Products, Inc., Seattle, Wash.
Arthur A. Olson & Co., Canfield, Ohio
Oran Co., Columbus, Ohio
Pennsylvania Furnace & Iron Co., Warren, Pa.
Prentiss Wabers Prods. Co., Wisconsin Rapids, Wisc.
Reliance Prods. Corp., Portland 14, Ore.
Rossoe Mfg. Co., Inc., Seattle, Wash.
Therm Gas Generator Co., Inc., Seattle, Wash.
Thermo-Prods., Inc., No. Judson, Ind.
U. S. Machine Div., Lebanon, Ind.
Volcano Burner Corp., New York 61, N.Y.
Wayne Home Eqpt. Co. Inc., Ft. Wayne 4, Ind.

Radiant, Pot Burner

American Gas Machine Co., Albert Lea, Minn.
Barridon Oil Burner Corp., Hartford, Conn.
Beyer Oil Burner Co., Rosamond, Calif.
Carlton Oil Burner Co., Hartford 3, Conn.
Coleman Co., Inc., Wichita, Kan.
Duo-Therm Div., Lansing 3, Mich.
Evans Prods., Plymouth, Mich.
Florence Stove Co., Gardner, Mass.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Laco Oil Burner Co., Inc., Griswold, Iowa
Magic Chef, Inc., St. Louis 10, Mo.
Makomb Steel Prods. Co. Div., Macomb, Ill.
Motor Wheel Corp., Lansing 3, Mich.
Prentiss Wabers Prods. Co., Wisconsin Rapids, Wisc.
Queen Stove Works, Inc., Albert Lea, Minn.
Quincy Stove Mfg. Co., The, Quincy, Ill.
Silent Sioux Corp., Orange City, Iowa
Therm Gas Generator Co., Inc., Seattle, Wash.
United Stove Co., Ypsilanti, Mich.

Radiant, Shell Burner

American Gas Machine Co., Albert Lea, Minn.
Barridon Oil Burner Corp., Hartford, Conn.
Carlton Oil Burner Co., Hartford 3, Conn.
Florence Stove Co., Gardner, Mass.
Motor Wheel Corp., Lansing 3, Mich.
Queen Stove Works, Inc., Albert Lea, Minn.

Wall Furnaces

Altherm, Inc., New York 21, N.Y.
American Gas Machine Co., Albert Lea, Minn.
Beyer Oil Burner Co., Rosamond, Calif.
Bryant Heater Div., Cleveland, Ohio
Coleman Co., Inc., Wichita, Kan.

Crane Co., Chicago 40, Ill.
Delta Htg. Corp., Trenton 8, N.J.
Domestic Mfg. Co., Seattle, Wash.
Electro-Watt Industries, Inc., Salem, Ore.
Electro-Watt, Inc., Seattle 1, Wash.
Evans Prods Co., Plymouth, Mich.
Holly Mfg. Co., Pasadena, Calif.
Iron Fireman Mfg. Co., Cleveland 11, Ohio
Kresky Mfg. Co., Inc., Petaluma, Calif.
Lawson Mfg. Co., Pittsburgh 8, Pa.
Little Burner Co., Inc., H. C., San Rafael, Calif.
Norman Prods Co., Columbus, Ohio
Northwest Metal Prods., Inc., Seattle, Wash.
Olson & Co., Arthur A., Canfield, Ohio
Quincy Stove Mfg. Co., The, Quincy, Ill.
Reliance Prods. Corp., Portland 14, Oreg.
Silent Sioux Corp., Orange City, Iowa
Therm Gas Generator Co., Inc., Seattle, Wash.
U. S. Machine Div., Lebanon, Ind.

Switches

Manual

Burke Eng. Co., Los Angeles 7, Calif.
Cutler-Hammer, Inc., Milwaukee 1, Wisc.
General Electric Co., Schenectady 5, N.Y.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Square D Co., Milwaukee 12, Wisc.

Overload

Burke Eng. Co., Los Angeles 7, Calif.
Cutler-Hammer, Inc., Milwaukee 1, Wisc.
General Electric Co., Schenectady 5, N.Y.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Spencer Thermostat Div., Attleboro, Mass.
Square D Co., Milwaukee 12, Wisc.

Pressure or Vacuum Actuated

Barksdale Valves, Los Angeles 11, Calif.
General Controls Co., Glendale 1, Calif.

Temperature

Barber-Colman Co., Rockford, Ill.
Cooper Co., Clark, Palmyra, N.J.
Cutler-Hammer, Inc., Milwaukee 1, Wisc.
Defender Instrument & Regulator Co., St. Louis, Mo.
Detroit Controls Corp., Detroit 8, Mich.
General Electric Co., Schenectady 5, N.Y.
Mercoid Corp., The, Chicago 41, Ill.
Miller-Harris Instrument Co., Milwaukee, Wisc.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Morse-Smith-Morse Co., Watertown, Mass.
Spencer Thermostat Div., Attleboro, Mass.
White-Rodgers Electric Co., St. Louis 6, Mo.

Tanks

Basement, Steel Oil Storage

Acme Htg. Div., W. Hartford 10, Conn.
Arcweld Mfg. Co., Inc., Seattle 99, Wash.
Bard Mfg. Co., Bryan, Ohio
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Butler Mfg. Co., Kansas City 26, Mo.
Economic Steel Pack Co., Everett, Mass.
Electro-Watt Industries, Inc., Salem, Ore.
Fire Proven Prods., Baltimore, Md.
Gary Steel Prods Co., Gary, Ind.
Gibraltar Corp. of America, Inc., Brooklyn, N.Y.
Henry Furnace Co., Medina, Ohio
Kaustine Co., Inc., Perry, N.Y.
Lynch Co., Inc., The, Portland 11, Ore.
Montag Stove & Furnace Works, Portland 17, Ore.
Norwalk Tank Co., So. Norwalk, Conn.
Olsen Mfg. Co., The C.A., Elyria, Ohio
Price Fireplace Heater & Tank Div., Buffalo, N.Y.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Salisbury Tank & Steel Co., Newburyport, Mass.
Sandberg Mfg. Co., Portland 10, Ore.
Shadyside Fdry., Martins Ferry, Ohio
Steel Tank & Sheet Metal Fabricators, Inc., Chicago 9, Ill.
Trageser Copper Works, Inc., Maspeth, L.I., N.Y.
Waterfilm Boilers, Inc., Jersey City 7, N.J.
Wood Co., John, Conshohocken, Pa.
Zambelli Boiler Works, Philadelphia 25, Pa.

Bulk Plant

Acme Htg. Div., W. Hartford 10, Conn.
Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Bowser, Inc., Ft. Wayne, Ind.
Butler Mfg. Co., Kansas City 26, Mo.
Columbian Steel Tank Co., Kansas City 1, Mo.
Eastern Steel Tank Corp., Flushing, N.Y.
Fisher Tank Co., Chester, Pa.
Graver Tank & Mfg. Co., Inc., E. Chicago, Ind.
Hammond Iron Works, New York, N.Y.
Kaustine Co., Inc., Perry, N.Y.
Norwalk Tank Co., So. Norwalk, Conn.
Pennsylvania Furnace & Iron Co., Warren, Pa.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Sharpsville Steel Fabricators, Inc., Sharpsville, Pa.
Wm. Bros Boiler & Mfg. Co., Minneapolis, Minn.

Expansion

Acme Htg. Div., W. Hartford 10, Conn.
Baseline Mfg. Corp., Minneapolis 23, Minn.
Bell & Gossett Co., Morton Grove, Ill.
Columbian Steel Tank Co., Kansas City 1, Mo.
Eastern Steel Tank Corp., Flushing, N.Y.
Fire Proven Prods., Baltimore 18, Md.
Gibraltar Corp. of America, Inc., Brooklyn, N.Y.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
National Steel Construction Co., Seattle 8, Wash.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Salisbury Tank & Steel Co., Newburyport, Mass.
Sharpsville Steel Fabricators, Inc., Sharpsville, Pa.
Thrush & Co., H. A., Peru, Ind.
Waterfilm Boilers, Inc., Jersey City 7, N.J.
Wm. Bros Boiler & Mfg. Co., Minneapolis, Minn.
Wood Co., John, Conshohocken, Pa.

Hot Water Storage

Acme Htg. Div., W. Hartford 10, Conn.
Bell & Gossett Co., Morton Grove, Ill.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Columbian Steel Tank Co., Kansas City 1, Mo.
Davis Eng. Corp., New York 33, N.Y.
Eastern Steel Tank Corp., Flushing, N.Y.
Gerstein & Cooper, Inc., So. Boston 27, Mass.
Hapman-Dutton Co., Kalamazoo, Mich.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Mund Boilers, Inc., Los Angeles 63, Calif.
National Steel Construction Co., Seattle 8, Wash.
Norse Boiler Co., Inc., New Market, N.J.
Patterson-Kelley Co., Inc., The, E. Stroudsburg, Pa.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Sharpsville Steel Fabricators, Inc., Sharpsville, Pa.
Steel Tank & Sheet Metal Fabricators, Inc., Chicago 9, Ill.
Thermo-Prods., Inc., No. Judson, Ind.
Waterfilm Boilers, Inc., Jersey City 7, N.J.
Wm. Bros Boiler & Mfg. Co., Minneapolis, Minn.
Wood Co., John, Conshohocken, Pa.
Yula Water Heaters, Inc., New York 63, N.Y.

Range Burner, Oil

Barridon Oil Burner Corp., Hartford, Conn.
Columbian Steel Tank Co., Kansas City 1, Mo.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.

Repair Kits

Tankit Co., Newark, N.J.

Space Heater, Oil

Barridon Oil Burner Corp., Hartford, Conn.
Columbian Steel Tank Co., Kansas City 1, Mo.
Silent Sioux Corp., Orange City, Iowa

Tank Cleaning Equipment

Visa-Clean Corp., Randallstown, Md.

Truck

Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Billings, Inc., Bronx 59, N.Y.
Bowser, Inc., Ft. Wayne, Ind.
Butler Mfg. Co., Kansas City 26, Mo.
Columbian Steel Tank Co., Kansas City 1, Mo.
D.&C. Eqpt. Co., Hartford 1, Conn.
Decker Bros., Hawthorne, N.J.
Heil Co., The, Milwaukee 1, Wisc.
Kaustine Co., Inc., Perry, N.Y.
Pennsylvania Furnace & Iron Co., Warren, Pa.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Sharpsville Steel Fabricators, Inc., Sharpsville, Pa.
Trailmobile Co., Cincinnati, Ohio
Triangle Tank Div., Inc., Brooklyn 22, N.Y.

Underground, Concrete, Oil Storage

Conspheres Co., New Canaan, Conn.

Underground, Steel Oil Storage

Acme Htg. Div., W. Hartford 10, Conn.
Allied Tank Truck Eqpt. Co., Philadelphia 30, Pa.
Arcweld Mfg. Co., Inc., Seattle 99, Wash.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.

Butler Mfg. Co., Kansas City 26, Mo.
Columbian Steel Tank Co., Kansas City 1, Mo.
Eastern Steel Tank Corp., Flushing, N.Y.
Electro-Watt Industries, Inc., Salem, Ore.
Gary Steel Prods. Co., Gary, Ind.
Gibraltar Corp. of America, Inc., Brooklyn, N.Y.
Graver Tank & Mfg. Co., Inc., E. Chicago, Ind.
Kaustine Co., Inc., Perry, N.Y.
Lynch Co., Inc., The, Portland 11, Ore.
Montag Stove & Furnace Works, Portland 17, Ore.
Norse Boiler Co., Inc., New Market, N.J.
Norwalk Tank Co., So. Norwalk, Conn.
Price Fireplace Heater & Tank Div., Buffalo, N.Y.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Rossoe Mfg. Co., Inc., Seattle, Wash.
Salisbury Tank & Steel Co., Newburyport, Mass.
Sandberg Mfg. Co., Portland 10, Ore.
Shadyside Fdry., Martins Ferry, Ohio.
Sharpsville Steel Fabricators, Inc., Sharpsville, Pa.
Trageser Copper Works, Inc., Maspeth, L.I., N.Y.
Waterfilm Boilers, Inc., Jersey City 7, N.J.
Wm. Bros Boiler & Mfg. Co., Minneapolis, Minn.
Wood Co., John, Conshohocken, Pa.
Zambelli Boiler Works, Philadelphia 25, Pa.

Water Heating

Bell & Gossett Co., Morton Grove, Ill.
Eastern Steel Tank Corp., Flushing, N.Y.
Hapman-Dutton Co., Kalamazoo, Mich.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
National Steel Construction Co., Seattle 8, Wash.
Norse Boiler Co., Inc., New Market, N.J.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Sharpsville Steel Fabricators, Inc., Sharpsville, Pa.
Waterfilm Boilers, Inc., Jersey City 7, N.J.
Yula Water Heaters, Inc., New York 63, N.Y.

Tank Stands, Racks

Fueloil Storage, Basement

Acme Htg. Div., W. Hartford 10, Conn.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Butler Mfg. Co., Kansas City 26, Mo.
Economic Steel Pack Co., Everett, Mass.
McGillis Service Eng., Brockton, Mass.

Hot Water Storage

Eastern Steel Tank Corp., Flushing, N.Y.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Waterfilm Boilers, Inc., Jersey City 7, N.J.

Tools, Pipe

Air Hammer

Brown-Appton Co., New York 22, N.Y.

Benders

Holsclaw Bros., Inc., Evansville, Ind.
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Tal Bender, Inc., Milwaukee 2, Wisc.

Copper Tubing Tools, Bend

Chase Brass & Copper Co., Waterbury 20, Conn.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Leggitt Co., S. H., Marshall, Mich.
Madden Brass Prod. Co., Chicago 19, Ill.
Martin Tube Benders, W. H., Owensboro, Ky.
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Span Brass Mfg. Co., Inc., Otsego, Mich.
Tal Bender, Inc., Milwaukee 2, Wisc.
Universal Brass Corp., Arlington, N.J.
Wayne Brass Co., Inc., Ft. Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio.

Copper Tubing Tools, Cut

Couplings Co., Chicago 16, Ill.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Leggitt Co., S. H., Marshall, Mich.
Madden Brass Prods. Co., Chicago 19, Ill.
Penn Brass & Copper Co., Erie, Pa.
Ridge Tool Co., The, Elyria, Ohio
Span Brass Mfg. Co., The, Otsego, Mich.
Universal Brass Corp., Arlington, N.J.
Wayne Brass Co., Inc., Ft. Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio

Copper Tubing Tools, Flare

Chase Brass & Copper Co., Waterbury 20, Conn.
Couplings Co., Chicago 16, Ill.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Leggitt Co., S. H., Marshall, Mich.
Madden Brass Prods. Co., Chicago 19, Ill.
Penn Brass & Copper Co., Erie, Pa.
Reading Brass Co., Hillsdale, Mich.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Universal Brass Corp., Arlington, N. J.
Wayne Brass Co., Inc., Ft. Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio

Copper Tubing Tools, Ream

Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Wayne Brass Co., Inc., Ft. Wayne, Ind.

Cutters

Ridge Tool Co., The, Elyria, Ohio

Masonry Drills

Carboloy Dept., Detroit 32, Mich.
New England Carbide Tool Co., Inc., Cambridge 39, Mass.

Power Stands

Ridge Tool Co., The, Elyria, Ohio

Reamers

Ridge Tool Co., The, Elyria, Ohio

Stocks & Dies

Ridge Tool Co., The, Elyria, Ohio

Threading Machine

Ridge Tool Co., The, Elyria, Ohio

Vises & Stands

Ridge Tool Co., The, Elyria, Ohio

Wrenches

Ridge Tool Co., The, Elyria, Ohio
Tubing Appliance Co., Inc., Los Angeles 45, Calif.

Tools: Portable Electric

Drills

Milwaukee Electrical Tool Corp., Milwaukee 8, Wisc.

Electric Hammer

Syntron Co., Homer City, Pa.
Tri-Saw Corp., St. Louis 17, Mo.

Saws

Krieg, Inc., Victor J., New York 12, N.Y.
Milwaukee Electrical Tool Corp., Milwaukee 8, Wisc.
R.C.S. Tool Sales Co., Joliet, Ill.

Tools, Power-actuated

Ramset Div., Cleveland 11, Ohio
Remington Arms Co., Bridgeport, Conn.

Tools, Sheet Metal

Band Saws

Bett-Marr Mfg. Co., Hopkins, Minn.

Hand Brakes

Falsington Mfg. Co., Falsington, Pa.
Hallmor, Inc., Bridgeville, Pa.

Hand Shears

Falsington Mfg. Co., Falsington, Pa.

Lockformers

Falsington Mfg. Co., Falsington, Pa.
Lockformer Co., The, Chicago 50, Ill.

Portable Brakes

Hallmor, Inc., Bridgeville, Pa.
Webb Machine & Tool Co., Imperial, Pa.

Portable Shears

Beverly Shear Mfg. Co., Chicago 43, Ill.
Falsington Mfg. Co., Falsington, Pa.

Power Hammer

American Pneumatic Tool Co., New York 22, N.Y.

Power Shears

Libert Machine Co., Green Bay, Wisc.

Punches

Falsington Mfg. Co., Falsington, Pa.

Transformers

Control

Detroit Controls Corp., Detroit 8, Mich.
Dongan Electric Mfg. Co., Detroit, Mich.
Forest Electric Co., The, Forest Park, Ill.
General Controls Co., Glendale 1, Calif.
General Electric Co., Schenectady 5, N.Y.
Hold-Tite Valve Mfg. Co., New York 22, N.Y.
Jefferson Electric Co., Bellwood, Ill.
Magnex Corp., Jamaica 18, N.Y.
Square D Co., Milwaukee 12, Wisc.
Union Spring & Mfg. Co., Jersey City, N.J.

Ignition

Ace Transformer Co., Inc., New York 16, N.Y.
Acme Electric Corp., Cuba, N.Y.

TRANSFORMERS

Aldrich Co., Wyoming, Ill.
Berkshire Transformer Corp., New Milford, Conn.
Dongan Electric Mfg. Co., Detroit, Mich.
Forest Electric Co., The, Forest Park, Ill.
General Controls Co., Glendale 1, Calif.
General Electric Co., Ft. Wayne 2, Ind.
General Electric Co., Schenectady 5, N.Y.
Harvey, Inc., Sid, Valley Stream, N.Y.
Hold-Tite Valve Mfg. Co., New York 22, N.Y.
HomEase Prods. Div., Inc., Paterson, N.J.
Jefferson Electric Co., Bellwood, Ill.
Magnex Corp., Jamaica 18, N.Y.
Penn Transformer Corp., Bellefonte, Pa.
Silent Flame Mfg. Co., Inc., New York 72, N.Y.
Union Spring & Mfg. Co., Jersey City, N.J.
Webster Electric Co., Racine, Wisc.

Traps

Boiler Return

Acker Organization, Inc., W. M., Cleveland 9, Ohio

Lifting

Acker Organization, Inc., W. M., Cleveland 9, Ohio

Non-return

Acker Organization, Inc., W. M. Cleveland 9, Ohio

Steam

Anderson Co., V. D., Cleveland 2, Ohio
Armstrong Machine Works, Three Rivers, Mich.
Clark Mfg. Co., Cleveland 14, Mich.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.

Truck Bodies

Service & Installations

Karyall Body, Inc., Cleveland 9, Ohio

Tubing

Aluminum

Leggitt Co., S. H., Marshall, Mich.
Linderme Tube Co., The, Cleveland 17, Ohio
Penn Brass & Copper Co., Erie, Pa.
Reliance Tubular Prods. Co., Cleveland 8, Ohio
Revere Copper & Brass, Inc., New York 17, N.Y.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Universal Brass Corp., Arlington, N.J.
Wayne Brass Co., Inc., Ft. Wayne, Ind.

Benders

(See listing on page 32d under Tools, Pipe, Copper Tubing, Bend, Brass)

Brass

American Brass Co., Waterbury 20, Conn.
Chase Brass & Copper Co., Waterbury 20, Conn.
Grinnell Co., Inc., Providence 1, R.I.
Reading Tube Corp., Long Island City, N.Y.
Reliance Tubular Prods. Co., Cleveland 8, Ohio
Revere Copper & Brass, Inc., New York 17, N.Y.
Wayne Brass Co., Inc., Ft. Wayne, Ind.

Coils

Rome-Turney Rad. Co., Rome, N.Y.
Taco Heaters, Inc., Providence, R.I.
Wayne Brass Co., Inc., Ft. Wayne, Ind.
Yula Water Heaters, Inc., New York 63, N.Y.

Copper

American Brass Co., Waterbury 20, Conn.
Chase Brass & Copper Co., Waterbury 20, Conn.
Couplings Co., Chicago 16, Ill.
Grinnell Co., Inc., Providence 1, R.I.
H.&H. Tube & Mfg. Co., Detroit 17, Mich.
Leggitt Co., S. H., Marshall, Mich.
Linderme Tube Co., The, Cleveland 17, Ohio
Penn Brass & Copper Co., Erie, Pa.
Reading Tube Corp., Long Island City, N.Y.
Reliance Tubular Prods. Co., Cleveland 8, Ohio
Revere Copper & Brass, Inc., New York 17, N.Y.
Rome-Turney Rad. Co., Rome, N.Y.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Universal Brass Corp., Arlington, N.J.
Wayne Brass Co., Inc., Ft. Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio
Wolverine Tube Div., Detroit 9, Mich.

Cutters

(See listing on page 32d under Tools, Pipe, Copper Tubing, Cut, Hangers)

Hangers

Grinnell Co., Inc., Providence 1, R.I.
Leggitt Co., S. H., Marshall, Mich.
Universal Brass Corp., Arlington, N.J.

Metal Flexible

Packless Metal Hose, Inc., New Rochelle, N.Y.

Plastic

Flexible Tubing Corp., Guilford, Conn.
U.S. Rubber Co., New York 20, N. Y.

Steel

Avon Tube Div., Rochester, Mich.

Unit Heaters

Direct Oilfired

Air Conditioning Eng. Co., Cambridge 41, Mass.
Airtherm Mfg. Co., St. Louis 10, Mo.
Altherm, Inc., New York 21, N.Y.
American Crop Drying Eqpt. Co., Crystal Lake, Ill.
American Fdry. & Furnace Co., Bloomington, Ill.
Campbell Co., E. K., Kansas City, Mo.
Chicago Steel Furnace Co., Chicago 17, Ill.
Chimney Furnace-Western, Seattle 44, Wash.
Dravo Corp., Pittsburgh 22, Pa.
Drying Systems, Inc., Chicago 40, Ill.
Fageol Heat Machine Co., Detroit 11, Mich.
Gilbert & Barker Mfg. Co., W. Springfield, Mass.
Lee Corp., Wilmington, Del.
Mueller Furnace Co., L. J., Milwaukee 15, Wisc.
National Heater Co., Inc., St. Paul 4, Minn.
Olson & Co., Arthur A., Canfield, Ohio
Over Head Heaters, Inc., Detroit 26, Mich.
Peabody Eng. Corp., New York 36, N.Y.
Therm-O-Bloc Div., So. Norwalk, Conn.

Hot Water

Airtherm Mfg. Co., St. Louis 10, Mo.
American Blower Corp., Dearborn, Mich.
Bishop & Babcock Mfg. Co., Cleveland 14, Ohio
Brown Prods. Co., Forest Hills, N.Y.
Buffalo Forge Co., Inc., Buffalo, N.Y.
Carrier Corp., Syracuse, N.Y.
Clarage Fan Co., Kalamazoo, Mich.
Fedders-Quigan Corp., Buffalo, N.Y.
Grinnell Co., Inc., Providence 1, R.I.
Hastings Air Conditioning Co., Inc., Hastings, Nebr.
Martin Fan & Blower Co., Inc., Chicago 50, Ill.
Modine Mfg. Co., Racine, Wisc.
National Rad. Co., The, Johnstown, Pa.
Nesbitt, Inc., John J., Philadelphia 36, Pa.
Rittling Corp., Buffalo 3, N.Y.
Skinner Htg. & Ventilating Co., Inc., St. Louis 6, Mo.
Sturtevant Div., Boston, Mass.
Trane Co., The, LaCrosse, Wisc.
U.S. Air Conditioning Corp., Minneapolis 14, Minn.
U.S. Rad. Corp., Detroit 26, Mich.
Warren Webster & Co., Camden 5, N.J.
Sturtevant Div., Boston 36, Mass.
Wing Mfg. Co., L. J., Linden, N.J.
Young Rad. Co., Racine, Wisc.

Steam

Airtherm Mfg. Co., St. Louis 10, Mo.
American Blower Corp., Dearborn, Mich.
Bishop & Babcock Mfg. Co., Cleveland 14, Ohio
Brown Prods. Co., Forest Hills, N.Y.
Buffalo Forge Co., Inc., Buffalo, N.Y.
Burnham Corp., Irvington, N.Y.
Carrier Corp., Syracuse, N.Y.
Clarage Fan Co., Kalamazoo, Mich.
Fedders-Quigan Corp., Buffalo, N.Y.
Grinnell Co., Inc., Providence 1, R.I.
Hastings Air Conditioning Co., Inc., Hastings, Nebr.
Kisco Boiler & Eng. Co., St. Louis 4, Mo.
Martin Fan & Blower Co., Inc., Chicago 50, Ill.
Modine Mfg. Co., Racine, Wisc.
National Rad. Co., The, Johnstown, Pa.
Nesbitt, Inc., John J., Philadelphia 36, Pa.
Rittling Corp., Buffalo 3, N.Y.
Skinner Htg. & Ventilating Co., Inc., St. Louis 6, Mo.
Sturtevant Div., Boston, Mass.
Trane Co., The, LaCrosse, Wisc.
U.S. Air Conditioning Corp., Minneapolis 14, Minn.
U.S. Rad. Corp., Detroit 26, Mich.
Warren, Webster & Co., Camden 5, N.J.
Sturtevant Div., Boston 36, Mass.
Wing Mfg. Co., L. J., Linden, N.J.
Young Rad. Co., Racine, Wisc.

Vacuum Cleaners

Boilers & Furnaces

Baker Furnace & Cleaner Mfg. Co., Toledo 6, Ohio

Breuer Electric Mfg. Co., Chicago 49, Ill.
Doyle Vacuum Cleaner Co., Grand Rapids, Mich.
Empire Chemical Prod. Co., Newark, N.J.
Kent Co., Inc., The, Rome, N.Y.
Master-Craft Supply Co., Inc., Haverstraw, N.Y.
National Super Service Co., Inc., Toledo 2, Ohio
Unique Art Mfg. Co., Inc., Newark, N.J.

Cleaning Brushes

Schaefer Brush Mfg. Co., Milwaukee 4, Wisc.

Hose

Admiral Rubber Corp., Brooklyn 32, N.Y.

Tools & Accessories

Baker Furnace & Cleaner Mfg. Co., Toledo 6, Ohio
Breuer Electric Mfg. Co., Chicago 49, Ill.
Doyle Vacuum Cleaner Co., Grand Rapids, Mich.
Empire Chemical Prod. Co., Newark, N.J.
Kent Co., Inc., The, Rome, N.Y.
Master-Craft Supply Co., Inc., Haverstraw, N.Y.
National Super Service Co., Inc., Toledo 7, Ohio
Schaefer Brush Mfg. Co., Milwaukee 4, Wisc.
Unique Art Mfg. Co., Inc., Newark 8, N.J.

Valves

Air Relief

American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anthony Co., Long Island City 1, N.Y.
Anderson Prods., Cambridge 39, Mass.
Bell & Gossett Co., Morton Grove, Ill.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Cooper Co., Clark, Palmyra, N.J.
Crane Co., Chicago 40, Ill.
Detroit Controls Corp., Detroit 8, Mich.
Edward Valves, Inc., E. Chicago, Ind.
Lammert & Mann Co., Chicago 12, Ill.
Maid-O-Mist, Inc., Chicago 41, Ill.
Rockwell Co., W. S., Fairfield, Conn.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Taco Heaters, Inc., Providence, R.I.
Watts Regulator Co., Lawrence, Mass.

Angle

Anderson Brass Co., Detroit 8, Mich.
Buckeye Iron & Brass Works, Dayton 1, Ohio
C-S Brass Mfg. Co., New York 23, N.Y.
Central Brass Mfg. Co., Cleveland, Ohio
Chase Brass & Copper Co., Waterbury 20, Conn.
Crane Co., Chicago 40, Ill.
Edward Valves, Inc., E. Chicago, Ind.
Grinnell Co., Inc., Providence 1, R.I.
Homestead Valve Mfg. Co., Coraopolis, Pa.
Leggitt Co., S. H., Marshall, Mich.
Marsh Corp., Skokie, Ill.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Ohio Brass Co., Mansfield, Ohio
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Remco Inc., Baltimore, Md.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Strong, Carlisle & Hammond Co., Cleveland 13, Ohio
Universal Brass Corp., Arlington, N.J.
Wayne Brass Co., Inc., Ft. Wayne, Ind.

Blow-off

Crane Co., Chicago 40, Ill.
Edward Valves, Inc., E. Chicago, Ind.
General Controls Co., Glendale 1, Calif.
Homestead Valve Mfg. Co., Coraopolis, Pa.
King Eng. Corp., Ann Arbor, Mich.
McDonnell & Miller, Inc., Chicago 18, Ill.
Rockwell Co., W. S. Fairfield, Conn.

Boiler Feed

Bell & Gossett Co., Morton Grove, Ill.
Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Central Brass Mfg. Co., Cleveland, Ohio
Crane Co., Chicago 40, Ill.
Edward Valves, Inc., E. Chicago, Ind.
General Controls Co., Glendale 1, Calif.
Homestead Valve Mfg. Co., Coraopolis, Pa.
McDonnell & Miller, Inc., Chicago 18, Ill.
Maid-O-Mist, Inc., Chicago 41, Ill.
Watts Regulator Co., Lawrence, Mass.

Exhaust

Crane Co., Chicago 40, Ill.
General Controls Co., Glendale 1, Calif.
National Fuel Conservation Co., Inc., White Plains, N.Y.
Rockwell Co., W. S., Fairfield, Conn.

Flow Control

A-P Controls Corp., Milwaukee, Wisc.
Anderson Brass Co., Detroit 8, Mich.
Automatic Switch Co., Orange, N.J.
Bell & Gossett Co., Morton Grove, Ill.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Cary Mfg. Co., Waupaca, Wisc.
Clark Mfg. Co., Cleveland 14, Ohio
General Controls Co., Glendale 1, Calif.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Homestead Valve Mfg. Co., Coraopolis, Pa.
Leahy Mfg. Co., Los Angeles 21, Calif.
McDonnell & Miller, Inc., Chicago 16, Ill.
Maid-O-Mist, Inc., Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Philadelphia Valve Co., Philadelphia 34, Pa.
Rockwell Co., W. S., Fairfield, Conn.
Staples & Pfeiffer, San Francisco 7, Calif.
Strong, Carlisle & Hammond Co., Cleveland 13, Ohio
Taco Heaters, Inc., Providence, R.I.
Thrush & Co., H. A., Peru, Ind.

Fuel Oil

Anderson Brass Co., Detroit 8, Mich.

Furnace Exhaust

Fuel Econ-O-Mizer Co., Providence 5, R.I.

Gate

Automatic Switch Co., Orange, N.J.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Chase Brass & Copper Co., Waterbury 20, Conn.
Crane Co., Chicago 40, Ill.
Edward Valves, Inc., E. Chicago, Ind.
General Controls Co., Glendale 1, Calif.
Leggitt Co., S. H., Marshall, Mich.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Morse-Smith-Morse Co., Watertown, Mass.
Ohio Brass Co., Mansfield, Ohio
Pilgrim Oil Burner Co., Hartford, Conn.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Schurs Oil Burner Co., Los Angeles 1, Calif.
Span Brass Mfg. Co., Inc., Otsego, Mich.

Globe

Automatic Switch Co., Orange, N.J.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Central Brass Mfg. Co., Cleveland, Ohio
Chase Brass & Copper Co., Waterbury 20, Conn.
Crane Co., Chicago 40, Ill.
Edward Valves, Inc., E. Chicago, Ind.
Grinnell Co., Inc., Providence 1, R.I.
Guardian Prods. Corp., Michigan City, Ind.
Leggitt Co., S. H., Marshall, Mich.
Marsh Corp., Jas. P., Skokie, Ill.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Morse-Smith-Morse Co., Watertown, Mass.
Ohio Brass Co., Mansfield, Ohio
Pilgrim Oil Burner Co., Hartford, Conn.
Quaker City Iron Works, Inc., Philadelphia 34, Pa.
Remco Inc., Baltimore, Md.
Span Brass Mfg. Co., Inc., Otsego, Mich.

Humidifier

Barber-Coleman Co., Rockford, Ill.
Cary Mfg. Co., Waupaca, Wisc.
General Controls Co., Glendale 1, Calif.
McDonnell & Miller, Inc., Chicago 18, Ill.
Maid-O-Mist, Inc., Chicago 41, Ill.
Scovill Mfg. Co., Waterbury 20, Conn.

Magnetic

Automatic Switch Co., Orange, N.J.
Barber-Coleman Co., Rockford, Ill.
Bell & Gossett Co., Morton Grove, Ill.
Bryant Heater Div., Cleveland, Ohio
Cary Mfg. Co., Waupaca, Wisc.
Cooper Co., Clark, Palmyra, N.Y.
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
General Electric Co., Schenectady 5, N.Y.
Johnson Corp., The, Three Rivers, Mich.
McDonnell & Miller, Inc., Chicago 18, Ill.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Perfex Corp., Milwaukee 7, Wisc.
Skinner Electric Valve Div., New Britain, Conn.

Manifold (Radiant Heating)

Milwaukee Valve Co., Milwaukee 7, Wisc.

Mixing

Bell & Gossett Co., Morton Grove, Ill.
Detroit Controls Corp., Detroit 8, Mich.
General Electric Co., Schenectady 5, N.Y.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Sarco Co., Inc., New York 1, N.Y.
Taco Heaters, Inc., Providence, R.I.
Watts Regulator Co., Lawrence, Mass.
Yula Water Heaters, Inc., New York 63, N.Y.

Motor-Operated

Barber-Coleman Co., Rockford, Ill.
Bell & Gossett Co., Morton Grove, Ill.
Crane Co., Chicago 40, Ill.
Fuel Watchman, Inc., New York 5, N.Y.
General Controls Co., Glendale 1, Calif.
Grinnell Co., Inc., Providence 1, R.I.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Mercoid Corp., The, Chicago 41, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Rockwell Co., W. S. Fairfield, Conn.
Sarco Co., Inc., New York 1, N.Y.

Needle

Anderson Brass Co., Detroit 8, Mich.
Automatic Switch Co., Orange, N.J.
Buckeye Iron & Brass Works, Dayton 1, Ohio.
C-S Brass Mfg. Co., New York 23, N.Y.
Cary Mfg. Co., Waupaca, Wisc.
Central Brass Mfg. Co., Cleveland, Ohio
Crane Co., Chicago 40, Ill.
Edward Valves, Inc., E. Chicago, Ind.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
King Eng. Corp., Ann Arbor, Mich.
Leggitt Co., S. H., Marshall, Mich.
McDonnell & Miller, Inc., Chicago 18, Ill.
Maid-O-Mist, Inc., Chicago 41, Ill.
Marsh Corp., Jas. P., Skokie, Ill.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Ohio Brass Co., Mansfield, Ohio
Reliance Tubular Prod. Co., Cleveland 8, Ohio
Renneburg & Sons Co., Edw., Baltimore 24, Md. (Oil Firing Valves)
Schurs Oil Burner Co., Los Angeles 1, Calif.
Span Brass Mfg. Co., Inc., Otsego, Mich.
Universal Brass Corp., Arlington, N.J.
Wayne Brass Co., Inc., Ft. Wayne, Ind.
Weatherhead Co., The, Cleveland 8, Ohio
Wilgus Mfg. Co., Los Angeles 21, Calif.

Oil, Anti-hum

Cary Mfg. Co., Waupaca, Wisc.
General Controls Co., Glendale 1, Calif.
Guardian Prods. Corp., Michigan City, Ind.
Holt-Tite Valve Mfg. Co., New York 22, N.Y.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Morse-Smith-Morse Co., Watertown, Mass.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Therm Gas Generator Co., Inc., Seattle, Wash.

Oil, Anti-syphon

Burn-Rite Prods. Co., Yonkers 2, N.Y.
Hold-Tite Valves Mfg. Co., New York 22, N.Y.
Lammert & Mann Co., Chicago 12, Ill.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Silent Flame Mfg. Co., Inc., New York 72, N.Y.

Oil, Check

Crane Co., Chicago 40, Ill.
Edward Valves, Inc., E. Chicago, Ind.
Hold-Tite Valve Mfg. Co., New York 22, N.Y.
Hydrovalve Co., Brooklyn 3, N.Y.
Lammert & Mann Co., Chicago 12, Ill.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Morse-Smith-Morse Co., Watertown, Mass.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.

Oil, Float

Autopulse Corp., Ludington, Mich.
Cooper Co., Clark, Palmyra, N.Y.
Detroit Controls Corp., Detroit 8, Mich.
Miller Co., The, Meriden, Conn.
Platt Prods. Corp., Lansing 4, Mich.

Oil, Foot

Buckeye Iron & Brass Works, Dayton 1, Ohio
Crane Co., Chicago 40, Ill.
Hold-Tite Valve Mfg. Co., New York 22, N.Y.
Kunkle Valve Co., Ft. Wayne 2, Ind.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Wilgus Mfg. Co., Los Angeles 21, Calif.

Oil, Fusible

Hold-Tite Valve Mfg. Co., New York 22, N.Y.
Morse-Smith-Morse Co., Watertown, Mass.
Preferred Utilities Mfg. Corp., New York 23, N.Y.

Oil, Metering

Cary Mfg. Co., Waupaca, Wisc.
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
McDonnell & Miller, Inc., Chicago 18, Ill.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Ray Oil Burner Co., San Francisco 12, Calif.
Staples & Pfeiffer, San Francisco 7, Calif.

Oil, Non-metering

Platt Prods. Corp., Lansing 4, Mich.

Oil, Pressure-regulating

Anthony Co., Long Island City 1, N.Y.
Barnes & Jones Co., Boston 31, Mass.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Cary Mfg. Co., Waupaca, Wisc.
Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Chandler Co., Cedar Rapids, Iowa
Clark Mfg. Co., Cleveland 14, Ohio
Cooper Co., Clark, Palmyra, N.Y.
Detroit Controls Corp., Detroit 8, Mich.
Eddington Metal Specialty Co., Eddington, Pa.
Hammel Oil Burning Eqpt. Co., Providence, R.I.
Kunkle Valve Co., Ft. Wayne 7, Ind.
Monarch Mfg. Works, Inc., Philadelphia 34, Pa.
Mueller Steam Specialty Co., Inc., Long Island City 4, N.Y.
National Oil Burner Co. of N.Y., Inc., Brooklyn, N.Y.
Staples & Pfeiffer, San Francisco 7, Calif.
Wilgus Mfg. Co., Los Angeles 21, Calif.

Oil, Safety Cut-off

Harvey, Inc., Sid, Valley Stream, N.Y.

Oil, Solenoid

Automatic Switch Co., Orange, N.J.
Cary Mfg., Waupaca, Wisc.
Cooper Co., Clark, Palmyra, N.Y.
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
Lammert & Mann Co., Chicago 12, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Ray Oil Burner Co., San Francisco 12, Calif.
Sarco Co., Inc., New York 1, N.Y.
Union Spring & Mfg. Co., Jersey City, N.J.

Oil, 3-Way-Tank

Anderson Brass Co., Detroit 8, Mich.
Automatic Switch Co., Orange, N.J.
Detroit Controls Corp., Detroit 8, Mich.
General Controls Co., Glendale 1, Calif.
Homestead Valve Mfg. Co., Coraopolis, Pa.
Therm Gas Generator Co., Inc., Seattle, Wash.
Universal Brass Corp., Arlington, N.J.

Plug

C-S Brass Mfg. Co., New York 23, N.Y.
Cooper Co., Clark, Palmyra, N.Y.
Couplings Co., Chicago 16, Ill.
Crane Co., Chicago 40, Ill.
Homestead Valve Mfg. Co., Coraopolis, Pa.
Imperial Brass Mfg. Co., The, Chicago 7, Ill.
Schoenberger Co., The W. J., Cleveland 5, Ohio.

Pop, Safety

Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Cooper Co., Clark, Palmyra, N.Y.
Crane Co., Chicago 40, Ill.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
Kunkle Valve Co., Ft. Wayne 2, Ind.

Radiator, Adjustable Orifice

Detroit Controls Corp., Detroit 8, Mich.
Grinnell Co., Inc., Providence 1, R.I.
Heat Timer Corp., New York 12, N.Y.
New York Air Valve Corp., Brooklyn, N.Y.

Radiator, Air (Above 3 lbs.)

Anderson Prods., Cambridge 39, Mass.
Detroit Controls Corp., Detroit 8, Mich.
Gorton Heating Corp., Cranford, N.J.
Grinnell Co., Inc., Providence 1, R.I.
Heat Timer Corp., New York 12, N.Y.
New York Air Valve Corp., Brooklyn, N.Y.
Schaible Co., Cincinnati, Ohio

Radiator, Air (Below 3 lbs.)

American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Anderson Prods, Cambridge 39, Mass.
Detroit Controls Corp., Detroit 8, Mich.
Dole Valve Co., Chicago 10, Ill.
Gorton Htg. Corp., Cranford, N.J.
Grinnell Co., Inc., Providence 1, R.I.
Heat Timer Corp., New York 12, N.Y.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Multiplex Mfg. Co., Berwick, Pa.
New York Air Valve Corp., Brooklyn, N.Y.

Radiator, Control Electric

Barber-Coleman Co., Rockford, Ill.
General Controls Co., Glendale 1, Calif.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Radiator, Control Pneumatic

Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.

Radiator, Control Self-Actuated

Grinnell Co., Inc., Providence 1, R.I.
Heat Timer Corp., New York 12, N.Y.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Sarco Co., Inc., New York 1, N. Y.
Sterling, Inc., Milwaukee 12, Wisc.

Radiator, Manual Modulating

Grinnell Co., Inc., Providence 1, R.I.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Sterling, Inc., Milwaukee 12, Wisc.

Radiator, Manual On-Off

American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Crane Co., Chicago 40, Ill.
Detroit Controls Corp., Detroit 8, Mich.
Grinnell Co., Inc., Providence 1, R.I.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Ohio Brass Co., Mansfield, Ohio
Sarco Co., Inc., New York 1, N.Y.
Sterling, Inc., Milwaukee 12, Wisc.

Radiator, Vacuum

Anderson Prods., Cambridge 39, Mass.
Detroit Controls Corp., Detroit 8, Mich.
Dole Valve Co., Chicago 10, Ill.
Grinnell Co., Inc., Providence 1, R.I.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Ohio Brass Co., Mansfield, Ohio
Sarco Co., Inc., New York 1, N.Y.

Relief

American Rad. & Std. Sanitary Corp., Pittsburgh 30, Pa.
Beaton & Cadwell Mfg. Co., New Britain, Conn.
Bell & Gossett Co., Morton Grove, Ill.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Cooper Co., Clark, Palmyra, N.Y.
Crane Co., Chicago 40, Ill.
Edward Valves, Inc., E. Chicago, Ind.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Controls Co., Glendale 1, Calif.
Kunkle Valve Co., Ft. Wayne 2, Ind.
Lammert & Mann Co., Chicago 12, Ill.
Leahy Mfg. Co., Los Angeles 21, Calif.
McDonnell & Miller, Inc., Chicago 18, Ill.
Milwaukee Valve Co., Milwaukee 7, Wisc.
Mueller Co., Decatur, Ill.
Ray Oil Burner Co., San Francisco 12, Calif.
Schoenberger Co., The W. J., Cleveland 5, Ohio
Span Brass Mfg. Co., Inc., Otsego, Mich.
Taco Heaters, Inc., Providence, R.I.
Thrush & Co., H. A., Peru, Ind.
Trane Co., The, La Crosse, Wisc.
Watts Regulator Co., Lawrence, Mass.

Saddle Valve

Maid-O-Mist, Inc., Chicago 41, Ill.

Safety

Automatic Switch Co., Orange, N.J.
Beaton & Cadwell Mfg. Co., New Britain, Conn.
Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Cooper Co., Clark, Palmyra, N.Y.
Crane Co., Chicago 40, Ill.
Eclipse Fuel Mfg. Co., Rockford, Ill.
Fitzgibbons Boiler Co., Inc., New York 17, N.Y.
General Controls Co., Glendale 1, Calif.
Kunkle Valve Co., Ft. Wayne 2, Ind.
Waxon Premix Burner Co., Muncie, Ind.
Mueller Co., Decatur, Ill.

Safety, Hot Water Tanks, Pressure Relief

Beaton & Cadwell Mfg. Co., New Britain, Conn.
Bell & Gossett Co., Morton Grove, Ill.
Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Cooper Co., Clark, Palmyra, N.Y.
Kunkle Valve Co., Ft. Wayne 2, Ind.
McDonnell & Miller, Inc., Chicago 18, Ill.
Mueller Co., Decatur, Ill.
Schoenberger Co., The W. J., Cleveland 5, Ohio
Thrush & Co., H. A., Peru, Ind.
Watts Regulator Co., Lawrence, Mass.

Safety, Hot Water Tanks, Temperature

A-P Controls Corp., Milwaukee, Wisc.
Beaton & Cadwell Mfg. Co., New Britain, Conn.
Bell & Gossett Co., Morton Grove, Ill.
Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Cooper Co., Clark, Palmyra, N.Y.
General Controls Co., Glendale 1, Calif.
Kunkle Valve Co., Ft. Wayne 2, Ind.
McDonnell & Miller, Inc., Chicago 18, Ill.
Mueller Co., Decatur, Ill.
Schoenberger Co., The W. J., Cleveland 5, Ohio
Thrush & Co., H. A., Peru, Ind.
Watts Regulator Co., Lawrence, Mass.

Safety, Hot Water Tanks, Vacuum

Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Cooper Co., Clark, Palmyra, N.Y.
Crane Co., Chicago 40, Ill.
McDonnell & Miller, Inc., Chicago 18, Ill.
Watts Regulator Co., Lawrence, Mass.

Slow Closing

Oil Eqpt. Mfg. Co., Inc., Louisville 11, Ky.

Tank

Guardian Prods. Corp., Michigan City, Ind.
Hold-Tite Valve Mfg. Co., New York 22, N.Y.

Tempering

Bell & Gossett Co., Morton Grove, Ill.
Detroit Controls Corp., Detroit 8, Mich.
Dole Valve Co., Chicago 10, Ill.
Sarco Co., Inc., New York 1, N.Y.
Sterling, Inc., Milwaukee 12, Wisc.
Taco Heaters, Inc., Providence, R.I.
Yula Water Heaters, Inc., New York 63, N.Y.

Thermostatic

A-P Controls Corp., Milwaukee, Wisc.
Alco Valve Co., St. Louis, Mo.
Barber-Coleman Co., Rockford, Ill.
Cooper Co., Clark, Palmyra, N.Y.
Detroit Controls Corp., Detroit 6, Mich.
General Controls Co., Glendale 1, Calif.
Grinnell Co., Inc., Providence 1, R.I.
Heat Timer Corp., New York 12, N.Y.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
McDonnell & Miller, Inc., Chicago 18, Ill.
Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn.
Sarco Co., Inc., New York 1, N.Y.
Sterling, Inc., Milwaukee 12, Wisc.
Trane Co., The, La Crosse, Wisc.
Yula Water Heaters, Inc., New York 63, N.Y.

Vacuum, Breaking

Buckeye Iron & Brass Works, Dayton 1, Ohio
Cash Valve Mfg. Corp., A. W., Decatur, Ill.
Crane Co., Chicago 40, Ill.
Hoffman Specialty Mfg. Corp., Indianapolis 7, Ind.
Hold-Tite Valve Mfg. Co., New York 22, N.Y.
Watts Regulator Co., Lawrence, Mass.

Vent

Anderson Prods., Cambridge 39, Mass.
Black, Sivalls & Bryson, Inc., Kansas City, Mo.
Buckeye Iron & Brass Works, Dayton 1, Ohio
Crane Co., Chicago 40, Ill.
Detroit Controls Corp., Detroit 8, Mich.
Gorton Htg. Corp., Cranford, N.J.
Heat Timer Corp., New York 12, N.Y.
Homestead Valve Mfg. Co., Coraopolis, Pa.
Maid-O-Mist, Inc., Chicago 41, Ill.
Marsh Corp., Jas. P., Skokie, Ill.
Sarco Co., Inc., New York 1, N.Y.
Taco Heaters, Inc., Providence, R.I.
Trane Co., The, La Crosse, Wisc.

Water Heaters

Direct Oilfired, Side Arm

Carlton Oil Burner Co., Hartford 3, Conn.

Dewey-Shepard Boiler Co., Indianapolis 2, Ind.
Hanson-Gates Mfg. Co., Inc., Reading, Mass.
Hotstream Heater Co., Cleveland, Ohio
Kresky Mfg. Co., Inc., Petaluma, Calif.
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Little Burner Co., Inc., H. C., San Rafael, Calif.
Major Oil Burner Co., Philadelphia 22, Pa.
Perfection Stove Co., Cleveland, Ohio
Safety Prods. Co., Brockton, Mass.
Therm Gas Generator Co., Inc., Seattle, Wash.
Timken Silent Automatic Div., Jackson, Mich.

Indirect Tank, Built-in

Alstrom Corp., New York 60, N.Y.
American Tube Prods., Inc., Natick, R.I.
Aqua Air Corp., Elmont, N.Y.
Bell & Gossett Co., Morton Grove, Ill.
Bernstrom, Inc., C. R., Providence, R.I.
Davis Eng. Corp., New York 33, N.Y.
Dewey-Shepard Boiler Co., Indianapolis 2, Ind.
General Fittings Co., Providence 5, R.I.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Norse Boiler Co., Inc., New Market, N.J.
O'Brien Steam Specialty Co., Inc., Syracuse 2, N.Y.
Triangle Tube & Specialty Co., Berlin, N.J.
Water Tube Boiler & Tank Co., Chicago, Ill.
Yula Water Heaters, Inc., New York 63, N.Y.

Indirect Tank, External

Alstrom Corp., New York 60, N.Y.
American Tube Prods., Inc., Natick, R.I.
Aqua Air Corp., Elmont, N.Y.
Bell & Gossett Co., Morton Grove, Ill.
Bernstrom, Inc., C. R., Providence, R.I.
Clayton Mfg. Co., El Monte, Calif.
Davis Eng. Corp., New York 33, N.Y.
General Fittings Co., Providence 5, R.I.
Gerstein & Cooper, Inc., So. Boston 27, Mass.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Lawson Mfg. Co., Pittsburgh 8, Pa.
Manning & Lewis Eng. Co., Newark 4, N.J.
O'Brien Steam Specialty Co., Inc., Syracuse 2, N.Y.
Thrush & Co., H. A., Peru, Ind.
Yula Water Heaters, Inc., New York 3, N.Y.

Indirect Tankless, Built-in

Alstrom Corp., New York 60, N.Y.
American Tube Prods., Inc., Natick, R.I.
Barridon Oil Burner Corp., Hartford, Conn.
Bell & Gossett Co., Morton Grove, Ill.
Bernstrom, Inc., C. R., Providence, R. I.
Clayton Mfg. Co., El Monte, Calif.
Davis Eng. Corp., New York 33, N.Y.
Dewey-Shepard Boiler Co., Indianapolis 2, Ind.
General Fittings Co., Providence 5, R.I.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Lewis & Co., Inc., Joseph E., Baltimore 30, Md.
Manning & Lewis Eng. Co., Newark 4, N.J.
Marietta Metal Prods. Corp., Marietta, Pa.
Portmar Boiler Co., Inc., Brooklyn, N.Y.
Taco Heaters, Inc., Providence, R.I.
Triangle Tube & Specialty Co., Berlin, N.J.
Utica Rad. Corp., Utica, N.Y.
Water Tube Boiler & Tank Co., Chicago, Ill.
York-Shipley, Inc., York, Pa.
Yula Water Heaters, Inc., New York 63, N.Y.

Indirect Tankless, External

A&C Sales Supply Co., Boston 18, Mass.
Allied Eng. Co., Allston 34, Mass.
Alstrom Corp., New York 60, N.Y.
American Tube Prods., Inc., Natick, R.I.
Bell & Gossett Co., Morton Grove, Ill.
Bernstrom, Inc., C. R., Providence, R.I.
Davis Eng. Corp., New York 33, N.Y.
Ever Hot All Copper, Inc., Boston 18, Mass.
Fire Proven Prods., Baltimore 18, Md.
General Fittings Co., Providence 5, R.I.
Gerstein & Cooper, Inc., So. Boston 27, Mass.
Johnson Corp., The, Three Rivers, Mich.
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Lewis & Co., Inc., Joseph E., Baltimore 30, Md.
Ret-Rac Corp., Flushing, N.Y.
Taco Heaters, Inc., Providence, R.I.
Thrush & Co., H.A., Peru, Ind.
Water Tube Boiler & Tank Co., Chicago, Ill.
Yula Water Heaters, Inc., New York 63, N.Y.

Steam Mixer Water Heater

O'Brien Steam Specialty Co., Inc., Syracuse 2, N.Y.

Storage, Direct, Atomizing, Vertical, Rotary Burner

Lawson Mfg. Co., Pittsburgh 8, Pa.
Mission Appliance Corp., Hawthorne, Calif.

Storage, direct, pot burner

Allen Mfg. Co., Inc., Nashville 1, Tenn.
American Gas Machine Co., Albert Lea, Minn.
Bastian-Morley Co., Inc., La Porte, Ind.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Coleman Co., Inc., The, Wichita, Kans.
Day & Night Div., Monrovia, Calif.
Delco Appliance Div., Rochester, N.Y.
DeSoto Oil Burner Co., York, Pa.
Dewey-Shepard Boiler Co., Indianapolis 2, Ind.
Dowagiac Steel Furnace Co., Dowagiac, Mich.
Duo-Therm Div., Lansing 3, Mich.
Evans Prods. Co., Plymouth, Mich.
Ex Cel Co., Dowagiac, Mich.
Gillen Co., J. L., Detroit 28, Mich.
Hanson-Gates Mfg. Co., Inc., Reading, Mass.
Holland Furnace Co., Holland, Mich.
Hotstream Heater Co., Cleveland, Ohio
Kam Water Heater Mfg. Co., Inc., Brooklyn, N.Y.
Kresky Mfg. Co., Inc., Petaluma, Calif.
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Landow Bros., Wallingford, Conn.
Little Burner Co., H.C., Inc., San Rafael, Calif.
Michigan Burner Co., Detroit 28, Mich.
Michigan Tank & Heater Corp., Dearborn, Mich.
Perfection Stove Co., Cleveland 4, Ohio
Platt Prods. Corp., Lansing 4, Mich.
Rheem Mfg. Co., Chicago 29, Ill.
Therm Gas Generator Co., Inc., Seattle, Wash.
Thermo-Prods., Inc., No. Judson, Ind.
Viking Mfg. Corp., Cleveland, Ohio

Storage Direct, Oilfired, Pressure Burner

Aldrich Co., Wyoming, Ill.
Altherm, Inc., New York 21, N.Y.
Auburn Burner Co., Auburn, Ind.
Bastian-Morley Co., Inc., La Porte, Ind.
Bock Corp., Madison 4, Wisc.
Brandenburg Industries, Inc., Baltimore 9, Md.
Brown Oil Burning Eqpt. Co., Cambridge 39, Mass.
Century Eng. Corp., Cedar Rapids, Ia.
Chalmers Oil Burner Co., Minneapolis, Minn.
Continental Water Heater Co., Los Angeles 3, Calif.
Dewey-Shepard Boiler Co., Indianapolis 2, Ind.
Electrol Burner Mfg. Co., Inc., Rutherford, N.J.
Fano-Flame Oil Burner Co., Huntington Park, Calif.
Hansen Tool & Die Co., Milwaukee 4, Wisc.
Hart Heat Div., Peoria 2, Ill.
Hotstream Heater Co., Cleveland, Ohio
Johnson Co., S. T., Oakland, Calif.
Kresno-Stamm Mfg. Co., Palisades Park, N.J.
Macleod Co., Cincinnati 22, Ohio
Major Oil Burner Co., Philadelphia 22, Pa.
Michigan Tank & Heater Corp., Dearborn, Mich.
Mund Boilers, Inc., Los Angeles 63, Calif.
National Home Eqpt. Co., New York 7, N.Y.
National Steel Construction Co., Inc., of Indiana, Loganport, Ind.
National Steel Construction Co., Seattle 8, Wash.
Nu-Way Corp., The, Rock Island, Ill.
Ontario Iron Works, Pulaski, N.Y.
Pacific Oil Co., Fall River, Mass.
Preferred Utilities Mfg. Corp., New York 23, N.Y.
Quiet Automatic Burner Corp., Newark 4, N.J.
Ray Oil Burner Co., San Francisco 12, Calif.
Reif-Rexoil, Inc., Buffalo 3, N.Y.
Scott-Newcomb, Inc., St. Louis 19, Mo.
Sigwald Eng. Co., Minneapolis, Minn.
Shepard Heater Co., Inc., Terre Haute, Ind.
Toledo Heater Co., Toledo 4, Ohio
True-Heet Co., Trenton, N.J.
U. S. Rad. Corp., Detroit 26, Mich.
Weatherall Eng. Inc., Providence, R.I.

Storage, Direct, Range Burner

Safety Prods. Co., Brockton, Mass.
Therm Gas Generator Co., Inc., Seattle, Wash.
Tower Mfg. Co., Boston, Mass.
Victor Oil Burner Mfg. Co., Hartford, Conn.

Storage, Direct Wall—Flame, Rotary Burner

Timken Silent Automatic Div., Jackson, Mich.
Toridheet Div., Cleveland 2, Ohio

Windows, Storm

Russell Co., F. C., Cleveland, Ohio

MANUFACTURERS OF
Oilburners, Oilburner and Heating Accessories, Equipment and Supplies

(Part II. Companies listed alphabetically)

—A—

A & A Register Co., 8327 Clinton Rd., Cleveland 9, Ohio
A & C Sales & Supply Co., 51 Albion St., Boston 18, Mass.
A-J Mfg. Co., 2119 Washington St., Kansas City 8, Mo.
A-P Controls Corp., 2540 No. 32d St., Milwaukee 10, Wisc.
Ace Eng. Co., 1435 W. 15th St., Chicago 8, Ill.
Ace Instrument Co., 172 Pacific St., Brooklyn 2, N.Y.
Ace Transformer Co., 539 Third Ave., New York 16, N.Y.
Acker Organization, Inc., W. M., 3167 Fulton Rd., Cleveland 9, Ohio
Acme Electric Corp., Cuba, N.Y.
Acme Heat & Power, Inc., 318 Ten Eyck St., Brooklyn 6, N.Y.
Acme Heating Div., United Tool & Die Co., 1031 New Britain Ave., W. Hartford 10, Conn.
Acme Industries, Inc., Mechanic & Ganson Sts., Jackson, Mich.
Acme Mfg. Co., State Rd. & Phawn St., Philadelphia 36, Pa.
Acme Oil Burner Co., 210 S.W. Third Ave., Cedar Rapids, Iowa
Acme Tank & Welding Div., United Tool & Die Co., 1031 New Britain Ave., W. Hartford 10, Conn.
Acme Tool & Gauge Co., 235-7 Charles St., Providence 4, R.I.
Adelta Mfg. Co., Inc., 21st & Ellsworth Sts., Philadelphia 46, Pa.
Admiral Rubber Corp., 75 19th St., Brooklyn 32, N.Y.
Air Conditioning Eng. Co., 44 First St., Cambridge 41, Mass.
Air Controls, Inc., Div. Cleveland Heater Co., 2310 Superior Ave., Cleveland 14, Ohio
Air Controls Products, Inc., Coopersville, Mich.
Air-Eau Heat, Inc., 1002 S.E. 53d Ave., Portland 12, Ore.
Air-Maze Corp., 2500 Miles Rd., Cleveland 28, Ohio
Airborne Industries, Inc., 525 Lyndale Ave., Minneapolis 11, Minn.
Aircraft-Marine Products, Inc., 1531 Fourth St., Harrisburg, Pa.
Aire Director Mfg. Co., Aurora at Mercer, Seattle 9, Wash.
Airflame, Inc., 646 McAllister, Waukegan, Ill.
Airtemp Div., Chrysler Corp., 1600 Webster St., Dayton 1, O.
Airtherm Mfg. Co., 728 So. Spring Ave., St. Louis 10, Mo.
Airwasher Corp., 205 Haven, Eaton Rapids, Mich.
Alan Distributors, Inc., 164 Main St., Worcester, Mass.
Alasco Burner Co., Inc., Winchendon, Mass.
Alco Valve Co., 833 Kingsland Ave., St. Louis, Mo.
Aldrich Co., 103 Williams St., Wyoming, Ill.
Alert Boiler & Mfg. Co., 9661 Robson St., Detroit 27, Mich.
Allen Co., Robert G., P.O. Drawer No. 110, Mechanicville, N.Y.
Allen Mfg. Co., Nashville 1, Tenn.
Allied Eng. Co., 20 Glenville Ave., Allston 34, Mass.
Allied Heating & Air Conditioning Co., P.O. Box 1025, Lawndale, Calif.
Allied Tank Truck Eqpt. Co., 24th & Brown Sts., Philadelphia 30, Pa.
Allis Chalmers Mfg. Co., General Machine Div., 1126 So. 70th St., Milwaukee 1, Wisc.
Alstrom Corp., 790 E. 176th St., Bronx 60, N.Y.
Altherm, Inc., 200 E. 72d St., New York 21, N.Y.
Alton Mfg. Co., 1112 Ross Ave., Dallas 2, Texas.
American Air Filter Co., Inc., 215 Central, Louisville, Ky.
American Blower Co., 8111 Tireman Ave., Detroit 32, Mich.
American Boiler & Fdry. Co., Milan, Mich.
American Brass Co., The, 414 Meadow St., Waterbury 20, Conn.
American Clay Forming Co., The, Corner Wall & Broad Sts., Tiffin, Ohio
American Coils, Inc., 360 Thomas St., Newark 5, N.J.
American Coolair Corp., 3606 Mayflower St., Jacksonville 3, Fla.
American Crop Drying Eqpt. Co., East St. & Crystal Lake Ave., Crystal Lake, Ill.
American Fdry. & Furnace Co., 917 E. Washington St., Bloomington, Ill.
American Gas Machine Co., 505 Front St., Albert Lea, Minn.
American Furnace Co., 1300 Hampton Ave., St. Louis 10, Mo.
American Ideal-Aire Corp., P.O. Box 470, Mineola, N.Y.
American-LaFrance-Foamite Corp., 127 E. LaFrance St., Elmira, N.Y.
American Lava Corp., Cherokee Blvd. & Mfgrs. Rd., Chattanooga 5, Tenn.
American Mfg. Co., Inc., 211 Walnut St., P.O. Box 2172, Hartford, Conn.
American Mohawk Co., 580 Hudson St., New York 14, N.Y.
American Oil Burners & Heating Utilities, 447 Senator St., Brooklyn 20, N.Y.
American Pneumatic Tool Co., 681 Fifth Ave., New York 22, N.Y.
American Radiator & Standard Sanitary Corp., P.O. Box 1226, Pittsburgh 30, Pa.
American Tube Products, Inc., Riverdale Bldg., Natick, R.I.
Anchor Stove & Range Co., New Albany, Ind.
Ames Iron Works, Inc., Oswego, N.Y.
Amionic Chemical Co., P.O. Box 371, Taunton, Mass.
Ampion Corp., 4-88 47th Ave., Long Island City 1, N.Y.
Anchor Div., Stratton & Terstegge Co., 300 Culbert St., New Albany, Ind.
Anderson Brass Co., 5305 Twelfth St., Detroit 8, Mich.
Anderson Co., V. D., 1968 W. 96th St., Cleveland 2, Ohio.
Anderson Products, Inc., 17 Tudor St., Cambridge 39, Mass.
Andrews Heating Co., 121-199 Main St., S.E., Minneapolis 14, Minn.
Anthony Co., The, 47-33 Fifth St., Long Island City 1, N.Y.
Appleman Glass Works, New Bridge & Windsor Rd., Bergenfield, N.J.
Applied Mechanics Co., 167 Oliver St., Boston 10, Mass.
Aqua-Air Corp., 1040 Hempstead Trnpk, Elmont, L.I., N.Y.
Arcweld Mfg. Co., Inc., 3469 Third Ave., W., Seattle 99, Wash.
Ardmore Products Div., Amco Corp., 2040 W. Carroll Ave., Chicago 12, Ill.
Argo Co., 436 Capitol Ave., Hartford 6, Conn.
Armstrong Co., The, 1001 E. 103d St., Chicago 28, Ill.
Armstrong Cork Co., Liberty St., Lancaster, Pa.
Armstrong Furnace, 851 W. Third Ave., Columbus 12, Ohio
Armstrong Machine Works, 851 Maple St., Three Rivers, Mich.
Arrow Petroleum Co., 4811 So. Harlem Ave., Chicago 38, Ill.
Artis Metal Co., Inc., Franklin Ln at 34th St., P.O. Box 1642, Boise, Idaho
Aston Products, Inc., 22084 Dequindre Ave., Hazel Park, Mich.
Atlantic Research Laboratories Corp., 29-05 Tenth Rd., Long Island City 1, N.Y.
Atlantic Steel Boiler Co., Inc., 22d & Washington Ave., Philadelphia 46, Pa.
Atlas Mfg. Co., Eutis & Robbins Sts., St. Paul 14, Minn.
Atlas Mfg. Co., 1624 61st St., Brooklyn 4, N.Y.
Auburn Burner Co., 510 Cedar St., Auburn, Ind.
Auburn Fdry., Inc., Heating Div., 601 W. 11th St., Auburn, Ind.
Auburn Spark Plug Co., Inc., Auburn, N.Y.
Auer Register Co., 6600 Clement Ave., Cleveland 5, Ohio
Autocar Co., Ardmore, Pa.
Auto-Flo Corp., 13526 Fenkell Ave., Detroit, Mich.
Auto-Heat Corp., Newfield St., Middletown, Conn.
Automatic Burner Corp., 1823 Carroll Ave., Chicago 12, Ill.
Automatic Controls Corp., Ann Arbor, Mich.
Automatic Devices, 714 Hillgrove Ave., Western Springs, Ill.
Automatic Firing Corp., 4417 Oleatha Ave., St. Louis 5, Mo.
Automatic Humidifier Co., Box 337, Cedar Falls, Iowa
Automatic Switch Co., 391 Lakeside Ave., Orange, N.J.
Autopulse Corp., 218 E. Dowland St., Ludington, Mich.
Avon Tube Div., Hibbie Mfg. Co., Fourth & Water Sts., Rochester, Mich.

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Babcock & Wilcox Co., 161 E. 42d St., New York 17, N.Y.
Bacharach Industrial Instrument Co., 7301 Penn Ave., Pittsburgh 8, Pa.
Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio
Baker Furnace & Cleaner Mfg. Co., 2810 Midwood Ave., Toledo 6, Ohio
Barber-Colman Co., 1300 Rock, Rockford, Ill.
Barclay, Inc., Robert, 122 No. Peoria St., Chicago 7, Ill.
Barco Mfg. Co., 500 No. Hough St., Barrington, Ill.

Bard Mfg. Co., Evansport Rd., Bryan, Ohio
Barksdale Valves, 1566 E. Slauson, Los Angeles 11, Calif.
Barnes & Jones Co., 128 Brookside Ave., Boston 30, Mass.
Barridon Oil Burner Corp., 1429 Park St., Hartford, Conn.
Barton Products, Inc., 819 No. Blanchard, Wheaton, Ill.
Bascom Co., Inc., Geo. R., 950 Old Colony Pkwy., Dorchester 22, Mass.
Baseline Mfg. Corp., 2137 K St., N.W., Washington 7, D.C.
Bastian-Morley Co., Inc., Truesdell Ave., La Porte, Ind.
Bauer Oil Burner, Inc., 1109 Adams St., Wilmington 16, Del.
Bayley Blower Co., 1817 So. 66th St., Milwaukee 14, Wisc.
Bearlee Products Co., 1255 So. Monroe Ave., Green Bay, Wisc.
Beaton & Caldwell Mfg. Co., New Britain, Conn.
Beaver Mfg. Co., 617 S.W. Third Ave., Portland 4, Ore.
Beck Co., A. C., 2018 No. DuPont Ave., Minneapolis 11, Minn.
Beck Eng. Combustion Kompany, 2100 Cole St., St. Louis 6, Mo.
Beckett, R. W., Elyria, Ohio
Bell & Gossett Co., 8200 No. Austin Ave., Morton Grove, Ill.
Benner-Nawman Co., 3421 Hollis St., Oakland, Calif.
Berger Furnace Mfg. Co., 5920 Center Ave., Pittsburgh 6, Pa.
Berkley Mfg. Co., 2045 No. Second St., Philadelphia 22, Pa.
Bernstrom, C. R., 183 Hartford Ave., Providence, R.I.
Berkshire Transformer Co., South Ave., New Milford, Conn.
Besser Metal Products Corp., 754 Clement Ave., Charlotte, N.C.
Best Combustion Eqpt. Co., Inc., 411-15 Eleventh St., Carlstadt, N.J.
Bethlehem Fdry. & Machine Co., 225 W. Second St., Bethlehem, Pa.
Bettendorf Oil Burner Co., 1400 E. Linn St., Marshalltown, Iowa
Bett-Mar Mfg. Co., 621 E. Excelsior, Hopkins, Minn.
Betts Machine Co., 1800 Pennsylvania Ave., W., Warren, Pa.
Beverly Shear Mfg. Co., 3004 W. 111th St., Chicago 43, Ill.
Beyer Oil Burner Co., Rosamond, Calif.
Billings, Inc., 549 Longfellow Ave., Bronx 59, N.Y.
Billow Corp., 565 W. Washington Blvd., Chicago 6, Ill.
Bishop & Babcock Mfg. Co., The, 4901 Hamilton Ave., Cleveland, Ohio
Black, Sivalls & Bryson, Inc., 7500 E. 12th St., Kansas City 3, Mo.
Blackmer Pump Co., 1809 Century Ave., Grand Rapids 9, Mich.
Bland Burner Co., 83 Woodbine St., Hartford, Conn.
Bock Corp., 110 Dickson, Madison 4, Wisc.
Boggs Boiler Co., 1007 Bank, Akron, Ohio
Boiler Eng. & Supply Co., Inc., Manavon Rd., Phoenixville, Pa.
Boston Auto Gage Co., 70 West St., Pittsfield, Mass.
Bovee Furnace Works, 180 W. Eighth St., Waterloo, Iowa
Boston Machine Works Co., The, 7 Willow St., Lynn, Mass.
Bowser, Inc., 1302 Creighton Ave., Fort Wayne 2, Ind.
Bradford Price Book, 96 Washington St., Quincy 69, Mass.
Bradley Mfg. Works, Bradley, Ill.
Brandenberg Industries, Inc., 6390 Falls Rd., Baltimore 9, Md.
Brandes Co., 2046 Winnebago St., Madison 4, Wisc.
Braun Bros. Oil Co., 812 Oak St., Winnetka, Ill.
Breese Burners, Inc., P.O. Box 1458, Santa Fe, N.M.
Bressler Eng. Service, 509 Fourth Ave., Oregon 1, Ill.
Breuer Electric Mfg. Co., 5100 No. Ravenswood Ave., Chicago 40, Ill.
Brown-Appton Co., 681 Fifth Ave., New York 22, N.Y.
Brown Fintube Co., The, 300 Huron St., Elyria, Ohio
Brown Oil Burning Eqpt. Co., 312 Massachusetts Ave., Cambridge 39, Mass.
Brown Products Co., 97-12 Metropolitan Ave., Forest Hills, N.Y.
Brown Steel Tank Co., 2901 S.E. Fourth St., Minneapolis 14, Minn.
Brumme Mfg. Co., 1240 E. Empire St., Bloomington, Ill.
Brundage Co., 512 No. Park, Kalamazoo 11, Mich.
Brunner Mfg. Co., 1821 Broad St., Utica 1, N.Y.
Bryant Air Conditioning Corp., 35 E. Poplar St., Philadelphia 23, Pa.
Bryant Heater Div., Affiliated Gas Eqpt., Inc., 17825 St. Clair Ave., Cleveland 10, Ohio
Bryan Steam Corp., P.O. Box 337, Peru, Ind.
Buckeye Furnace Pipe Co., 897 Ingleside Ave., Columbus, Ohio
Buckeye Iron & Brass Works, 324 E. Third St., P.O. Box 883, Dayton 1, Ohio
Buffalo Forge Co., Inc., 490 Broadway, Buffalo, N.Y.
Burke Eng. Co., 1204 W. Washington Blvd., Los Angeles 7, Calif.
Burnham Corp., 2 Main St., Irvington, N.Y.
Burn-Rite Products Co., 354 Sawmill Rd., Yonkers 2, N.Y.
Bush Mfg. Co., 179 South St., W. Hartford 10, Conn.
Bussman Mfg. Co., University at Jefferson, St. Louis 7, Mo.
Butler Mfg. Co., 7400 E. 13th St., Kansas City, 26, Mo.
Bryant Corp., C. L., 2720 E. 79th St., Cleveland 3, Ohio

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C-S Brass Mfg. Co., 148 W. 62d St., New York 23, N.Y.
Calculator Specialties Co., 122 S. Michigan Ave., Chicago, Ill.
Caloroil Burner Corp., 850 Windsor St., Hartford, Conn.
Campbell Machine Co., 2921 Stevens Ave., Minneapolis, Minn.
Campbell Co., E. K., 1809 Manchester St., Kansas City 4, Mo.
Campbell Heating Co., 3121 Dean St., Des Moines 17, Iowa
Cannon Chemical Co., Inc., 181 Portland St., Cambridge 41, Mass.
Cantleek Products Corp., 135-39 Northern Blvd., Flushing 52, N.Y.
Capitol Mfg. & Supply Co., The, 153 Fulton St., Columbus 10, Ohio
Capson Co., Inc., 108 Rogers Ave., Brooklyn, N.Y.
Carboloy Dept., General Electric Co., 1117 E. Eight & Miller Rd., Detroit 32, Mich.
Carlin Co., The, River Rd., P.O. Box 32, Wethersfield, Conn.
Carlyle Rubber Co., Inc., 64 Park Pl., New York 7, N.Y.
Carlton Oil Burner Co., Carlton Mfg. Co. Div., 35 Chapel St., Hartford 3, Conn.
Carolina Refractories Co., P.O. Box 549, Hartsville, S.C.
Carrier Corp., 300 So. Geddes St., Syracuse 1, N.Y.
Carver Pump Co., 1056 Heushey Ave., Muscatine, Iowa
Cary Mfg. Co., Churchill St., Paupaca, Wisc.
Cash Valve Mfg. Corp., A. W., 666 E. Wabash Ave., Decatur, Ill.
Central Brass Mfg. Co., 2950 E. 55th St., Cleveland 4, Ohio
Century Electric Co., 1806 Pine St., St. Louis 3, Mo.
Century Eng. Corp., 403 Third St., S.E., Cedar Rapids, Iowa
Certified Furnace Co., Div. of Stainless & Steel Products Co., 1000 Berry Ave., St. Paul 4, Minn.
Chalmers Oil Burner Co., 312 Lumber Exchange Bldg., Minneapolis, Minn.
Champion Bronze Powder & Paint Co., 2526 W. Van Buren St., Chicago 12, Ill.
Chandler Co., 804 First Ave., N.W., Cedar Rapids, Iowa
Char-Gale Mfg. Co., 4325 Hiawatha St., Minneapolis, Minn.
Chase Brass & Copper Co., 236 Grand St., Waterbury 20, Conn.
Charter Oak Stove & Range Co., 7734 Hall St., St. Louis 15, Mo.
Chelsea Products, Inc., Chelsea, Mich.
Chester Cable Corp., Oakland Ave., Chester, N.Y.
Chevrolet Motor Div., General Motors Corp., General Motors Bldg., Detroit 2, Mich.
Chicago Steel Furnace Co., 9326 So. Anthony Ave., Chicago 17, Ill.
Chimney Furnace Corp., 400 Stonestreet Ave., Rockville, Md.
Chimney Furnace-Western, 2310 Rainier Ave., Seattle 44, Wash.
Chimney Sales Corp., National Bank Bldg., Fredericksburg, Va.
Cities Service Oil Co. Pa., 70 Pine St., New York, N.Y.
Citro Oil Burners Corp., 222 Lakeside Ave., Pompton Lakes, N.J.
Clarage Fan Co., North & Porter Sts., Kalamazoo 16, Mich.
Clark Mfg. Co., 1830 E. 38th St., Cleveland 14, Ohio
Clarkstan Corp., 11921 W. Pico Blvd., Los Angeles 64, Calif.
Clayton & Lambert Mfg. Co., 1701 Dixie Highway, Louisville 10, Ky.
Clayton Mfg. Co., P.O. Box 550, El Monte, Calif.
Cleaver Brooks Co., 326 E. Keefe Ave., Milwaukee 12, Wisc.
Cleen Sweep Co., P.O. Box 156, So. Lansing 9, Mich.
Cleveland Fuel Eqpt. Co., 1111 Brook Park Rd., Cleveland 9, Ohio
Cleveland Humidifier Co., 7803 Wade Park Ave., Cleveland 3, Ohio
Climax Flexible Coupling Co., The, 863 E. 140th St., Cleveland 10, Ohio
Climatemaker Slide Rule, The, 1404 E. Washington St., Bloomington, Ill.
Clinton Metallic Paint Co., Clinton, N.Y.
Coal-O-Matic Co., Trucksville, Pa.
Coleman Co., Inc., The, 250 No. St. Francis, Wichita 1, Kans.
Cole-Sewell Eng. Co., 2288 University Ave., St. Paul, Minn.
Columbia Boiler Co., Pottstown, Pa.
Columbian Steel Tank Co., 1401-1621 W. 12th St., Kansas City 1, Mo.
Combination Boiler Co., Benton Harbor, Mich.
Combustion Control Corp., 720 Beacon St., Boston, Mass.
Combustion Div., Steel Products Eng. Co., 1205 W. Columbia St., Springfield, Ohio

Commercial Filters Corp., 2 Main St., Melrose 76, Mass.
Conco Eng. Works, Box 111, Mendota, Ill.
Concord Oil Corp., One Bay Blvd., Lawrence, L.I., N.Y.
Condensation Eng. Corp., 3511 W. Potomat Ave., Chicago 51, Ill.
Connelley Co., 3100 Washington Blvd., St. Louis 3, Mo.
Connecticut Refining Co., 105 Water St., W. Haven, Conn.
Conn. State Furnace Co., Inc., 340 Kossuth St., Bridgeport, Conn.
Connor Eng. Corp., Shelter Rock Rd., Danbury, Conn.
Consolidated Industries, Inc., Bypass 52, Lafayette, Ind.
Conshperes Co., 38 Harrison Ave., New Canaan, Conn.
Continental Radiant Glass Heating Corp., 1 E. 35th St., New York 16, N.Y.
Continental Water Heater Co., 1801 Pasadena Ave., Los Angeles 3, Calif.
Cooper Co., Clark, Clark St., Palmyra, N.J.
Coppus Eng. Corp., Worcester 2, Mass.
Corbman Bros., Inc., 315 No. Seventh St., Philadelphia, Pa.
Corlett-Turner Co., 1001 So. Kostner Ave., Chicago 24, Ill.
Coroaire Heater Corp., 1422 Euclid Ave., Cleveland 15, Ohio
Coughlan Co., G. N., 29 Spring St., West Orange, N.J.
Couplings Co., The, 55 E. 18th St., Chicago 16, Ill.
Cox Mfg. Co., Ridgeville, Ind.
Crane Co., 836 So. Michigan Ave., Chicago 5, Ill.
Crane Packing Co., 1800 Cuyler Ave., Chicago 13, Ill.
Crise Controls Div., Acro Mfg. Co., 2040 E. Main St., Columbus 16, Ohio
Cristy Specialty Corp., 21 Putnam Ave., Worcester, Mass.
Cromwell Printery, Inc., 61 Hudson Ave., Albany, N.Y.
Crotty Mfg. Co., Inc., The, 133-12 35th Ave., Flushing, N.Y.
Crown Eng. Corp., Broadway & Clark St., Keyport, N.J.
Crown Petroleum Corp., 92 Walnut St., Hartford, Conn.
Cuno Eng. Corp., The, 80 So. Vine St., Meriden, Conn.
Cuthrell Machine Works, 3505 Franklin St., Norfolk 6, Va.
Cutler-Hammer, Inc., 315 No. 12th St., Milwaukee 1, Wisc.
Cyclotherm Div., U. S. Radiator Corp., 157 E. First St., Oswego, N.Y.

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D & C Eqpt. Co., 10 Edwards St., Hartford 1, Conn.
"David" Automatic Oil Burners, 229 Morse St., Camden, N.J.
Davis Eng. Corp., 630 Fort Washington Ave., New York 33, N.Y.
Decker Bros., 300 Lincoln Ave., Hawthorne, N.J.
Defender Instrument & Regulator Co., 815 Clark Ave., St. Louis 2, Mo.
Degree Day Systems, 3930 58th St., Woodside, L.I., N.Y.
DeLaval Steam Turbine Co., 853 Nottingham Way, Trenton 2, N.J.
Delavan Mfg. Co., 811 Fourth St., W. Des Moines, Iowa
Delco Appliance Div., General Motors Corp., 391 Lyell Ave., Rochester 6, N.Y.
Delco Products Div., General Motors Corp., 329 E. First St., Dayton 1, Ohio
D'Elia Oil Burner Co., Inc., 145 Stratford Ave., Bridgeport 8, Conn.
Delta Heating Corp., 1 Cole St., Trenton 8, N.J.
Denver Fire Clay Co., 2301 Blake St., Denver 17, Colo.
Des Moines Furnace & Stove Repair Co., 107 S.W. Second Ave., Des Moines 5, Iowa
DeSoto Oil Burner Corp., 630 Loucks Mill Rd., York, Pa.
Detroit Controls Corp., 5900 Trumbull Ave., Detroit 8, Mich.
Dewey-Shepard Boiler Co., 1311 No. Capitol Ave., Indianapolis 2, Ind.
Diamond Instrument Co., North Ave., Wakefield, Mass.
Diamond Iron Works, Inc., 1728 Second Street No., Minneapolis 11, Minn.
Diamond Power Specialty Corp., P.O. Box 415, Lancaster, Ohio
Dielectric Products Corp., Inc., 125 Virginia Ave., Jersey City 5, N. J.
Diesel Burner Co., The, Moosup, Conn.
Diesel Oil Burner Corp. of New York, 105-20 New York Blvd., Jamaica 5, N.Y.
Dixon Boiler Works, 1625 Naud St., Los Angeles, Calif.
Dodge Div., Chrysler Corp., 7900 Joseph Campau Ave., Detroit 31, Mich.
Doerr Electric Corp., 510 No. Fourth Ave., Cedarburg, Wisc.
Dole Valve Co., 1933 Carroll Ave., Chicago 10, Ill.
Domestic Mfg. Co., 201 Westlake, No., Seattle 9, Wash.
Dominion Chemical Co., Inc., 11 W. 42d St., New York, N.Y.
Dongan Electric Mfg. Co., 2987 Franklin St., Detroit 7, Mich.
Dornback Furnace & Fdry. Co., 724 E. 103d St., Cleveland 8, Ohio
Dortsch Stove Works, Inc., Franklin, Tenn.
Dowagiac Steel Furnace Co., 109 Beeson St., Dowagiac, Mich.
Doyle Vacuum Cleaner Co., 225 Stevens St., S.W., Grand Rapids 2, Mich.
Draco Furnace Co., Inc., Morris Field, Charlotte, N.C.
Dravo Corp., 206 Dravo Bldg., Pittsburgh 22, Pa.
Drexel Mfg. Co., 1223 Federal, Philadelphia, Pa.
Drico Industrial Corp., 559 W. 35th St., New York 1, N.Y.
Ducane Heating Corp., Park Ave., Lincoln Park, N.J.
Drying Systems, Inc., 1800 Foster Ave., Chicago 40, Ill.
Dualtron Co., 322 Perry Highway, Pittsburgh 29, Pa.
Duff, David & Son, 640 Pleasant St., New Bedford, Mass.
Dunham Co., C. A., 400 W. Madison St., Chicago 6, Ill.
Dunkirk Radiator Corp., Dunkirk, N.Y.
Duo-Therm Div., Motor Wheel Corp., Corner Mt. Hope & Washington, Lansing 3, Mich.
Dwyer Mfg. Co., F. W., 317 So. Western Ave., Chicago 12, Ill.

—E—

Eagle-Picher Co., American Bldg., Cincinnati 1, Ohio
Eastern Tool Co. of Springfield, Mass., 29 Worthington St., Springfield 3, Mass.
East Coast Co., 141 Milk St., Boston 9, Mass.
Eastern Steel Tank Corp., 40th Rd., Flushing, N.Y.
Eaton Mfg. Co., 739 E. 140th St., Cleveland 10, Ohio
Eckhart Mfg. Co., Inc., 931 Lehigh Ave., Union, N.J.
Eclipse Fuel Eng. Co., 1100 Buchanan St., Rockford, Ill.
Economo Products Co., 17 State St., New York 4, N.Y.
Economic Steel Rack Co., 25 Garvey St., Everett, Mass.
Economy Lubricating Co., 6 Temple St., Charlestown 29, Mass.
Economy Pumps, Inc., 19th & Lehigh, Philadelphia 32, Pa.
Eddington Metal Specialty Co., 1050 Czarnecki St., Eddington, Pa.
Eds-Wil Eng., 2816 No. Washteman, Chicago 47, Ill.
Edward Valves, Inc., 1200 W. 145th St., E. Chicago, Ind.
Eddy Stoker Corp., 4711 W. North Ave., Chicago 39, Ill.
Electric Hose & Rubber, 12th & Lure Sts., Wilmington, Del.
Electric Motor Development Co., Wickliffe, Ohio
Electric Motors Service, 6133 Market St., Philadelphia 39, Pa.
Electrical Components Co., 600 So. 11th St., Newark 3, N.J.
Electriglas Corp., New Bridge Rd., Bergenfield, N.J.
Electro Machines, Inc., Cedarburg, Wisc.
Electro-Therm, Inc., 931 Selim Rd., Silver Spring, Md.
Electro-Watt, Inc., Aurora at Mercer, Seattle 1, Wash.
Electro-Watt Industries, Inc., 3501 Portland Rd., Salem, Ore.
Electrol Burner Mfg. Co., Inc., 22 Union Ave., Rutherford, N.J.
Ellcon Co., The, 30 Church St., New York 7, N.Y.
Ellison Draft Gauge Co., 548 W. Monroe St., Chicago 6, Ill.
Elmira Steel Co., Chemical Div., 185 Montague St., Brooklyn 2, N.Y.
Emerson Electric Mfg. Co., 8100 Florissant Ave., St. Louis 21, Mo.
Empire Chemical Products Co., 10 Longworth St., Newark, N.J.
Engineer Co., 75 West St., New York 6, N.Y.
Enterprise Engine Machinery, Sub. of General Metals Corp., 18th & Florida Sts., San Francisco 10, Calif.
Enterprise Heat & Power Co., 1401 W. North Ave., Chicago 22, Ill.
Equi-Dyne Co., 5729 W. Ohio St., Chicago 44, Ill.
Erie Meter Systems, Inc., P.O. Box 559, Erie, Pa.
Esso Standard Oil Co., 15 W. 51st St., New York 19, N.Y.
Estate-Heatrola Div., Noma Electric Corp. of New York, Hamilton, Ohio
Ernst Water Column & Gauge Co., Livingston, N.J.
Evans Products, Plymouth, Mich.
Everhot All-Copper, Inc., 51 Albion St., Boston 18, Mass.
Ewbank Co., 500 Pennsylvania Ave., Matamoras, Pa.
Ex Cel Co., 129 So. Front St., Dowagiac, Mich.
Excell Heating & Air Conditioning Co., 3715 W. Belmont Ave., Chicago 18, Ill.
Excelsior Steel Furnace Co., 118 So. Clinton St., Chicago 6, Ill.

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Faber Eng. Co., Amber & Westmoreland Sts., Philadelphia, Pa.
Fageol Heat Machine Co., 5725 Mt. Elliott Ave., Detroit 11, Mich.
Fairchester Oil Co., Inc., 84 So. Water St., Port Chester, N.Y.
Fairfield Oil Heating Co., Inc., 20 Bridge St., Greenwich, Conn.
Falcon Eqpt. Co., 13th St., New Brighton, Pa.
Falsington Mfg. Co., Falsington, Pa.
Falz Mfg., 1930 St. Anthony Ave., St. Paul 4, Minn.

Fano-Flame Oil Burner Co., 3323 Olive St., Huntington Park, Calif.
Fargo Foundry Co., Inc., 92 No. P. Ave., Fargo, N.D.
Farquhar Furnace Co., 230 Owens Ave., Wilmington, Ohio
Farrar & Trefts, Inc., 20 Milburn St., Buffalo 12, N.Y.
Farrell Mfg. Co., Cass St. & Bissell, Joliet, Ill.
Fasco Industries, Inc., No. Union & Agusta Sts., Rochester 2, N.Y.
Faultless Oil Burner Co., 113-29 Farmers Ave., St. Albans 2, L.I., N.Y.
Fedders-Quigan Corp., 57 Tonawanda St., Buffalo, N.Y.
Federal Boiler Co., Inc., Granite & West Sts., Midland Park, N.J.
Federal Engineers, Inc., 29 Massasoit Ave., Barrington, R.I.
Federal Oil Burner Co., Inc., 3620 Walnut St., Philadelphia 4, Pa.
Field Control Div., H. D. Conkey Co., 1950 Thomas St., Mendota, Ill.
Fire Proven Products, 25th St. & Sherwood Ave., Baltimore 18, Md.
Firewell Co., Inc., The, 3685 Broadway, Buffalo 25, N.Y.
Fisher Eng. Co., 258 35th St., N.E., Washington, D.C.
Fisher Tank Co., 3d & Booth Sts., Chester, Pa.
Fitzgibbons Boiler Co., Inc., 101 Park Ave., New York 17, N.Y.
Flame-Master Co., The, 6651 No. Clark St., Chicago 26, Ill.
Fleck Co., Haddon Ave. & Line St., Camden, N.J.
Flexible Couplings Mfg. Co., 8145 Dobson Ave., Chicago 19, Ill.
Flexible Tubing Corp., New Whitfield St., Guilford, Conn.
Floral City Heater Co., 402 So. Monroe St., Monroe, Mich.
Florence Stove Co., 205 School St., Gardner, Mass.
Fluid Heat Div., Anchor Post Products, Inc., 6500 Eastern Ave., Baltimore 24, Md.
Fluid Systems, Inc., 1881 Dixwell Ave., New Haven, Conn.
Ford, Henry, 3511 No. 13th St., Philadelphia 40, Pa.
Ford Div., Ford Motor Co., P.O. Box 658, Dearborn, Mich.
Forest Cities Fdrys. Co., 2500 W. 27th St., Cleveland 13, Ohio
Forest Electric Co., 7216 Circle Ave., Forest Park, Ill.
Fram Corp., 55 Pawtucket Ave., Providence 16, R.I.
Frigidaire Div., General Motors Corp., 300 Taylor St., Dayton 1, Ohio
Friez Instrument Div., Bendix Aviation Corp., 1400 Taylor Ave., Baltimore 4, Md.
Front Rank Mfg. Co., 2500 Ohio Ave., St. Louis 4, Mo.
Fruehauf Trailer Co., 10940 Harper Ave., Detroit 32, Mich.
Fuel Econ-O-Mizer Co., 1 Washington Ave., Providence 5, R.I.
Fuel Savers, Inc., 1501 Herr St., Harrisburg, Pa.
Fuel Watchman, Inc., 37 Wall St., New York 5, N.Y.
Fulton Boiler Works, Inc., Box 228, Fulton, N.Y.
Fulton Sylphon Div., Robertshaw-Fulton Controls Co., Knoxville, Tenn.
Furblo Co., Hermansville, Mich.

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GMC Truck & Coach Div., General Motors Corp., 660 So. Blvd., Pontiac 11, Mich.
Gemlen Chemical Co., 4 Midland Ave., E. Paterson, N.J.
Gary Steel Products Co., 4400 W. Ninth Ave., Gary, Ind.
Gas Oil Air Eqpt. Co., 137 Thompson St., New Haven 6, Conn.
Gasoline & Oil Eqpt. Co., 224 Bassett St., New Haven 11, Conn.
Gates Rubber Co., 999 So. Broadway, Denver 17, Colo.
Gem Clay Forming Co., 16th St. & Railroad St., Sebring, Ohio
Gem Giant Oil Burner Co., Inc., Box 186, Westmoreland, N.Y.
Gem Industrial Fuel Oil Burners, Frankfort, Ky.
General Automatic Products Corp., 2300 Sinclair Lane, Baltimore 13, Md.
General Blower Co., 8611 Ferris Ave., Morton Grove 2, Ill.
General Controls Co., 801 Allen Ave., Glendale 1, Calif.
General Electric Co., 5 Lawrence St., Bloomfield, N.J.
General Electric Co., Ft. Wayne 2, Ind.
General Electric Co., Appliance Control Dept., Morrison, Ill.
General Filters, Inc., 12890 Westwood Ave., Detroit 23, Mich.
General Fittings Co., 123 Georgia Ave., Providence 5, R.I.
General Heating Products Co., 1205 Hamilton St., Philadelphia 23, Pa.
General Machine Co., Inc., Fourth & Furnace Sts., Emmaus, Pa.
General Oil Heating Corp., 324 55th St., W. New York 2, N.J.
General Power Plant Corp., 10 St. Paul's Pl., Ossining, N.Y.
General Products Co., Fredericksburg, Va.
General Refractories Co., 1520 Locut St., Philadelphia 2, Pa.
General Thriftmaster Products, 1205 Hamilton St., Philadelphia, Pa.
General Utilities Corp., 1520 No. Broad St., Philadelphia 21, Pa.
Gerett Co., M. A., 724 Winnebago, Milwaukee 5, Wisc.
Gerstein & Cooper, Inc., 1 W. Third St., So. Boston 27, Mass.
Gibraltar Corp. of America, Inc., 223 No. Ninth St., Brooklyn 11, N.Y.
Gilbert & Barker Mfg. Co., Cold Springs Ave., W. Springfield, Mass.
Gillen Co., J. L., 12202 Wormer Ave., Detroit 28, Mich.
Glasfloss Div., The, Tilo Roofing Co., Inc., 155 E. 44th St., New York 17, N.Y.
Glo-Heat Co., 914 Rising Sun Ave., Philadelphia 40, Pa.
Globe Controls Co., 81 Warren St., Newark, N.J.
Gold Star Oil Burner Mfg. Co., Inc., 146 Warburton Ave., Yonkers 2, N.Y.
Golden Flame Mfg. Co., 320-322 Line St., Camden 3, N.J.
Goodrich Co., The B. F., Akron, Ohio
Goodrich Oil Burner Mfg. Corp., 106 Whalley Ave., New Haven, Conn.
Goodall Rubber Co., Whitehead Rd., Trenton 4, N.J.
Goodyear Tire & Rubber Co., The, 1144 E. Market St., Akron, Ohio
Gorman-Rupp Co., The, 305 Bowman St., Mansfield, Ohio
Gorton Heating Corp., Cranford, N.J.
Gould Oil Burner Co., 107 Terrace, Boston, Mass.
Granberg Corp., 1308 67th St., Oakland, Calif.
Grand Island Furnace & Supply Co., P.O. Box 508, Grand Island, Nebr.
Grant Mfg. Corp., 825 Communipaw Ave., Jersey City, N.J.
Grant Wilson, Inc., 141 W. Jackson Blvd., Chicago 4, Ill.
Graver Tank & Mfg. Co., Inc., Tod Ave., E. Chicago, Ind.
Gray & Dudley Co., 2300 Clifton Rd., Nashville, Tenn.
Gray Metal Products, Inc., 30 Carlton St., Rochester 3, N.Y.
Green Colonial Furnace Co., 322 S.W. 3d St., Des Moines 7, Iowa
Green Fire Brick Co., A. P., Mexico, Mo.
Greene & Hodgson, Inc., 31 Commercial St., Providence 5, R.I.
Greene Mfg. Co., A., 3409 Hutchinson St., Philadelphia 40, Pa.
Greenwood Eng. Co., Inc., 1023 Ridgley St., Baltimore 30, Md.
Grinnell Co., Inc., 260 W. Exchange, Providence 1, R.I.
Gross-Aire Mfg. Co., 9416 W. Milton Ave., Overland 14, Mo.
Guardian Products Corp., 1215 E. Second St., Michigan City, Ind.
Gustin-Bacon Mfg. Co., Tenth & Central Cennial Bldg., Kansas City 6, Mo.

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H. & H. Tube Mfg. Co., 245 No. Forman Ave., Detroit 17, Mich.
Hago Products, 1281 Springfield Ave., Irvington 11, N.J.
Hall-Neal Furnace Co., 1324 No. Capitol Ave., Indianapolis 7, Ind.
Hallmor, Inc., McMurray Rd., Bridgeville R.D. 2, Pa.
Hammel Oil Burning Eqpt. Co., 20 Stevens St., Providence, R.I.
Hamilton Rubber Mfg. Corp., P.O. Box 361, Trenton 3, N.J.
Hammond Iron Works, 630 Fifth Ave., New York, N.Y.
Handelan Washed Air Co., 4006 Washburn Ave., So., Minneapolis 10, Minn.
Handi Eqpt. Co., 908 Tenth St., Racine, Wisc.
Hano Co., Inc., Phillip, 230 Fifth Ave., New York 1, N.Y.
Hannay & Son, Inc., Clifford B., Westerlo, N.Y.
Hansen Tool & Die Co., 1531 So. First St., Milwaukee 4, Wisc.
Hanson-Gates Mfg. Co., Inc., 12 Prescott St., Reading, Mass.
Hapman-Dutton Co., 638 Gibson St., Kalamazoo, Mich.
Harbinson & Co., Inc., J. K., 70 W. Chippewa St., Buffalo 2, N.Y.
Harbison-Walker Refractories Co., 1800 Farmers Bank Bldg., Pittsburgh 22, Pa.
Hardinge Oil Burner & Mfg. Co., 1770 Berteau Ave., Chicago 13, Ill.
Harner Boiler Corp., 331 Sutter Ave., Brooklyn 12, N.Y.
Harsch & Co., H., 230 Tuscan Rd., Maplewood, N.J.
Hart & Cooley Mfg. Co., 500 E. 8th St., Holland, Mich.
Hart Heat Div., Avery Farm Machinery Co., 2006 So. Washington St., Peoria 2, Ill.
Harvey, Chester T., 130 Cheyenne Trail, Portsmouth, Va.
Harvey, Inc., Sid, 100 Mineola Ave., Valley Stream, N.Y.
Harvey-Whipple, Inc., 2155 Columbus Ave., Springfield, Mass.
Hastings Air Conditioning Co., Inc., 108 So. Colorado Ave., Hastings, Nebr.
Haydon Products Corp., 1801 Eighth Ave., Brooklyn 15, N.Y.
Hays Corp., E. Eighth St., Michigan City 7, Ind.
Hayward Mfg. Co., 505 Court St., Brooklyn 31, N.Y.
Healy-Ruff Co., 797 Hampden Ave., St. Paul 14, Minn.
Heat, Inc., 460 W. Larned St., Detroit 26, Mich.
Heat Controller, Inc., Manitou Beach, Mich.
Heat Timer, Inc., 657 Broadway, New York 12, N.Y.
Heatcraft Co., 419 W. Main St., Louisville 2, Ky.
Heating Eqpt. Mfg. Co., 600 Indiana St., San Francisco, Calif.
Heating Specialties, Inc., Knecht Ave., Baltimore 29, Md.
Heatlox Furnaces, Inc., 1725 Jefferson St., Tacoma, Wash.
Heet-Master Products Co., 2251 Kirk Ave., Baltimore 18, Md.

Henry Furnace Co., The, Medina, Ohio
Henwood Associates, Roy M., 149 Cedar St., New York 6, N.Y.
Herco Oil Burner Corp., 131-5 Locust St., Lancaster, Pa.
Hercules Chemical Co., Inc., 332 Canal St., New York 13, N.Y.
Hershey Machine & Fdry. Co., Motor Stokor Div., Manheim, Pa.
Heil Co., The, 3000 W. Montana St., Milwaukee 1, Wisc.
Helman Chimney Sales Co., J. H., National Bank Bldg., Fredericksburg, Va.
Hershner Mfg. Co., 1024 So. Edgar St., York, Pa.
Hess Co., 1855 So. 54th Ave., Chicago 50, Ill.
Hewitt-Robins, Inc., 666 Glenbrook Ave., Stamford, Conn.
Hidy Co., Elmo D., 6919 Montgomery Rd., Cincinnati 36, Ohio
Hillier's Oil Heating Co., Lodi, Wisc.
Hoffman Specialty Mfg. Corp., 1001 York St., Indianapolis 7, Ind.
Holan Co., J. H., 4100 W. 150th St., Cleveland 11, Ohio
Hold-Tite Valve Mfg. Co., 735 Lexington Ave., New York 22, N.Y.
Holland Furnace Co., Holland, Mich.
Holly Mfg. Co., 875 So. Arryoa Pkwy, Pasadena, Calif.
Holsclaw Bros., Inc., 408 No. Willow Rd., Evansville, Ind.
Home Furnace Co., 280 E. Sixth St., Holland, Mich.
Home Furnace & Fdry. Co., Coldwater, Mich.
HomEase Products Div., Inc., 52 Iowa Ave., Paterson, N.J.
Homestead Valve Mfg. Co., P.O. Box 348, Coraopolis, Pa.
Hoover Co., The, Kingston—Colney Div., 68 Brook Ave., No. Plainfield, N.J.
Hopkins Volcanic Specialties, Inc., 1094 No. Union Ave., Alliance, Ohio
Howell Eng. Corp., Box 111, Oregon, Ill.
Hotstream Heater Co., 6927 Quincy Ave., Cleveland, O.
Hupp Corp., 1250 W. 76th St., Cleveland 2, Ohio
Huss Oil Burner Accessories Corp., Delavan Ave. & Beech St., E. Port Chester, Conn.
Hyle Oil Burner Co., Frederick & Dutton, Catonsville, Md.
Hydrovalve Co., 1319 Utica Ave., Brooklyn 3, N.Y.
Hyzer & Lewellen, Southampton, Pa.

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Illinois Iron & Bolt Co., Freeman Heating Div., 914 So. Michigan Ave., Chicago 5, Ill.
Illinois Testing Laboratories, 420 No. LaSalle St., Chicago 10, Ill.
Imperial Brass Mfg. Co., The, 1200 W. Harrison St., Chicago 7, Ill.
Ingersoll Products Div., Borg-Warner Corp., 760 E. Vine St., Kalamazoo, Mich.
Ingersoll-Rand Co., 11 Broadway, New York 4, N.Y.
Ingersoll Steel Div., 310 So. Michigan Ave., Chicago 4, Ill.
Independent Register Co., 3747 E. 93d St., Cleveland 5, Ohio
Instrument Laboratory, Inc., 934 Elliott Ave., W., Seattle, Wash.
Insulating Refractories Co., P.O. Box 322, San Rafael, Calif.
Insulation & Refractories Co., 12 W. Main St., Williamson, N.Y.
International Boiler Works Co., King St., E. Stroudsburg, Pa.
International Heater Co., 101 Park Ave., Utica, N.Y.
International Metal Hose Co., Div. of Gabriel Co., 1523 E. 45th St., Cleveland 3, Ohio
International Oil Burner Co., 3800 Park Ave., St. Louis 10, Mo.
International Register Co., 2624 W. Washington Blvd., Chicago 12, Ill.
International Sales Co., 2045 Evans Ave., San Francisco 24, Calif.
Iron Fireman Mfg. Co., 3170 W. 106th St., Cleveland 11, Ohio
Iron-Hide Sales Co., Dock St., Matawan, N.J.

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Jackson & Church Co., 321 No. Hamilton, Saginaw 1, Mich.
Jaden Mfg. Co., Inc., 1601 W. Second St., Hastings, Nebr.
Jan-Air, Inc., Richmond, Ill.
Jefferson Electric Co., Bellwood, Ill.
Jenkins Eng. Co., 518 Virginia St., Seattle 1, Wash.
Jettronaire, Inc., Hoeveler & Railroad Sts., Springdale, Pa.
Johns-Manville, Inc., 22 E. 40th St., New York 16, N.Y.
Johnson Corp., The, 805 Wood St., Three Rivers, Mich.
Johnson Heater Corp., 1 Winnisimmet St., Chelsea, Mass.
Johnson Co., S. T., 940 Arlington St., Oakland 8, Calif.
Johnston Bros., Inc., Third & Pine Sts., Ferrysburg, Mich.
Johnson Service Co., 507 E. Michigan St., Milwaukee, Wisc.
Jordon Eng. Co., Hartford, Wisc.
Jungers Stove & Range Co., Grafton, Wisc.

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Kalamazoo Stove & Furnace Co., Kalamazoo, Mich.
Kalmide Chemicals, Inc., 17 E. 42d St., New York 17, N.Y.
Kam Water Heater Mfg. Co., Inc., 239 Alabama Ave., Brooklyn 7, N.Y.
Kam Water Heater Mfg. Co., Inc., 239 Alabama Ave., Brooklyn 7, N.Y.
Karr Range Co., Seventh & Harrison St., Belleville, Ill.
Karyall Body, Inc., 8221 Clinton Rd., Cleveland 9, Ohio
Kauffman Air Conditioning Corp., 4505 Oliver St., St. Louis 8, Mo.
Kaustine Co., Inc., 1953 Jackson, Perry, N.Y.
Keith Furnace Co., 2601 Dean St., Des Moines, Iowa
Keil's, 1000 E. 12th St., Wilmington, Del.
Kemix Laboratories, W. Springfield, Pa.
Kenite Laboratory, 23 Samson Ave., Madison, N.J.
Kennard Corp., 1819 S. Hanley Rd., St. Louis 17, Mo.
Kent Co., Inc., The, 348 Canal St., Rome, N.Y.
Kewanee-Ross Corp., 101 Franklin St., Kewanee, Ill.
Key Co., 27th & McCasland Ave., E. St. Louis, Ill.
King Boiler & Furnace Co., Shade Gap, Pa.
King Chemical Co., 31 New Haven R.R. St., Mt. Vernon, N.Y.
King Eng. Co., 415 Detroit St., Ann Arbor, Mich.
Kinsley Burner & Machine Co., 55 Sims Ave., Providence 9, R.I.
Kisco Boiler & Eng. Co., 2414 DeKalb St., St. Louis 4, Mo.
Kleen-Heet, Inc., 1823 Carroll Ave., Chicago 12, Ill.
Kleer-Kleen Mfg. Co., 901 72d Ave., Oakland 3, Calif.
Kleenwit Chemical Co., Corner Golden & Mystic Ave., Medford, Mass.
Knox Stove Works, Inc., P.O. Box 1031, 2016 Ailor Ave., Knoxville 7, Tenn.
Kohler Co., Kohler, Wisc.
Kolb Refractories Co., Meadow & Jackson Sts., Philadelphia 48, Pa.
Kol-Master Corp., First & Madison, Oregon, Ill.
Ko-Z-Aire, Inc., 401 Coolbaugh St., Red Oak, Iowa
Kraissl Co., The, 299 Williams Ave., Hackensack, N.J.
Kresky Mfg. Co., Inc., Second & "H" Sts., Petaluma, Calif.
Kresno-Stamm Co., Inc., 115 W. Palisades Blvd., Palisades Park, N.J.
Krieg, Inc., 611 Broadway, New York 12, N.Y.
Kritzer Radiant Coils, Inc., 2901 Lawrence Ave., Chicago 25, Ill.
Krueger-Sentry Gauge Co., Inc., 1056 W. Mason St., Sta. A, Green Bay, Wisc.
Kunkle Valve Co., 119-121 S. Clinton St., Fort Wayne 2, Ind.

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Laclede-Christy Products Co., 812 Arcade Bldg., St. Louis 1, Mo.
Laco Oil Burner Co., Inc., Cass St., Griswald, Iowa
Lake Chemical Co., 3052 W. Carroll St., Chicago 12, Ill.
Lammert & Mann Co., 1759 W. Walnut St., Chicago 12, Ill.
Lamson Oil Corp., 355 Allen Ave., Providence 5, R.I.
Lancaster Heat Transfer Co., Inc., 123 DeKalb Ave., Brooklyn 1, N.Y.
Landow Bros., 145 Quinnipiac St., Wallingford, Conn.
LaSalle Oil Burner Co., Inc., 3615 Stone Way, Seattle 3, Wash.
Lattner Mfg. Co., P. M., P. O. Box 1710, Cedar Rapids, Iowa
Lau Blower Co., 2001 Home Ave., Dayton 7, Ohio
Lawson Mfg. Co., 300 No. Lexington Ave., Pittsburgh 8, Pa.
Leahy Mfg. Co., 1804 E. 8th St., Los Angeles 21, Calif.
Lee Corp., 1001 Tatnall St., Wilmington, Del.
Leeson Air Conditioning Corp., 14631 Meyers Rd., Detroit 27, Mich.
Leffel & Co., The James, 426 East St., Springfield, Ohio
Leggitt Co., S. H., 325 N.E. High St., Marshall, Mich.
Lepick Heater Co., 1742 Fourth Ave., So., Seattle 4, Wash.
Leisur-Maid Mfg. Corp., 338 Wealthy St., S.W., Grand Rapids 3, Mich.
Lennox Furnace Co., 200 So. 12th Ave., Marshalltown, Iowa
Lewis & Co., Inc., Joseph E., 1307 Carroll St., Baltimore 30, Md.
Libert Machine Co., 324 No. Roosevelt, Green Bay, Wisc.
Lientz & Co., B. P., 210 W. Eighth St., P.O. Box 2275, Kansas City 42, Mo.
Lifetime Mfg. Co., Pemberville, Ohio
Lima Register Co., The, 651 No. Baxter St., Lima, Ohio
Linden Metal Specialty Co., Anoka, Minn.
Lindmere Tube Co., 1500 E. 219th St., Cleveland 17, Ohio
Lipman Refrigeration Div., Yates-American Machine Co., Beloit, Wisc.
Liquideth Indicators, Inc., 43-22 10th St., Long Island City 1, N.Y.

Liquidometer Corp., 41-03 36th St., Long Island City 1, N.Y.
Little Burner Co., Inc., Woodland & Dubois, San Rafael, Calif.
Lockformer Co., The, 4615 W. Roosevelt Rd., Chicago 50, Ill.
Loline Steel Boiler Co., 228 So. Penn St., Allentown, Pa.
Lookout Boiler & Mfg. Co., Manufacturers Rd. & Compress St., Chattanooga 1, Tenn.
Lonergan Mfg. Co., Clark & Edison, Albion, Mich.
Long Mfg. Co., Inc., Tarboro, N.C.
Lord Mfg. Co., 1635 W. 12th St., Erie, Pa.
Louthan Mfg. Co., The, 2000 Harvey Ave., E. Liverpool, Ohio
Louvra Corp., The, 1010 Jeanette Ave., Union, N.J.
Lovejoy Flexible Coupling Co., 4949 W. Lake St., Chicago 44, Ill.
Livingston, Inc., Marshall, Mich.
Loxaire Corp., 1725 Jefferson Ave., Tacoma, Wash.
Lundt, Inc., Ernest, Little Falls, N.J.
Luty Furnace Mfg. Co., 8747 Lyndon Ave., Detroit 21, Mich.
Lycoming-Spencer Div., Avco Mfg. Corp., 652 Oliver St., Williamsport, Pa.
Lynch Co., Inc., The, 6000 N.E., Union Ave., Portland 11, Oreg.
Lynn Products Co., 17 Willow St., Lynn, Mass.

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Macleon Co., Bogen St., Cincinnati 22, Ohio
MacLeod & Henry Co., Inc., 357 First St., Troy, N.Y.
McCabe-Powers Auto Body Co., 5900 No. Broadway, St. Louis 15, Mo.
McCorckle Co., D. H., Sixth & Bancroft Way, Berkeley, Calif.
McDonald Mfg. Co., A. Y., Dubuque, Iowa
McDonnell & Miller, Inc., 3500 No. Spaulding Ave., Chicago 18, Ill.
McGillis Service Eng., 1554 Main St., Brockton, Mass.
McKee Air Conditioning Co., 3861 Fremont Ave., No., Minneapolis 12, Minn.
McLarty Systems, 2600 Dickman Rd., Battle Creek, Mich.
McQuay, Inc., 1601 Broadway St., N.E., Minneapolis, Minn.
McPherson Furnace & Supply Co., P.O. Box 7706, Portland 12, Ore.

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Mack Motor Trucks Corp., 350 Fifth Ave., New York 1, N.Y.
Madden Brass Products Co., 1111 No. Franklin St., Chicago 10, Ill.
Madsen Service, 3549 Nicollet Ave., Minneapolis 8, Minn.
Magic Chef, Inc., 1641 So. Kingshighway Blvd., St. Louis 10, Mo.
Magnaflow Pump Co., 45 Actor Pl., New York 3, N.Y.
Magnetrol, Inc., 2110 So. Marshall Blvd., Chicago 23, Ill.
Magnex Corp., 90-28 Van Wyck Express Way, Jamaica 18, N.Y.
Maid-O-Mist, Inc., 3217 No. Pulaski Rd., Chicago 41, Ill.
Majestic Co., Inc., The, Erie St., Huntington, Ind.
Major Oil Burner Co., 2123 No. Broad St., Philadelphia 22, Pa.
Makomb Steel Products Co., Div. of Globe American Corp., Macomb, Ill.
Malleable Iron Fittings Co., Branford, Conn.
Manning & Lewis Eng. Co., 28-30 Ogden St., Newark 4, N.J.
Manville Boiler Co., Inc., 415 Lexington Ave., New York 17, N.Y.
Marathon Electric Mfg. Corp., Cherry & Randolph Sts., Wausau, Wisc.
Marco Industries, Inc., 786 Terrace Blvd., Depew, N.Y.
MarCoil Heater Co., 200-202 Paterson Plank Rd., Union City, N.J.
Marietta Metal Products Corp., 540 No. 63d St., Philadelphia, Pa.
Marine Electrolysis Eliminator Co., 617 Dearborn St., Seattle, Wash.
Marlo Coil Co., 6135 Manchester Ave., St. Louis 10, Mo.
Marlow Pumps, Box 566, Ridgewood, N.J.
Marnis Oil Co., Inc., 255 Exterior St., New York 5, N.Y.
Marquart Mfg. Co., 1241 High St., Oakland, Calif.
Marsh Corp., Jos. P., 3501 Howard St., Skokie, Ill.
Martin Fan & Blower Co., 4634 W. 21st Pl., Chicago 50, Ill.
Martin Tube Benders, W. H., P.O. Box 692, Owensboro, Ky.
Marvel Eng. Co., 625 W. Jackson Blvd., Chicago 6, Ill.
Mason Machine Co., Inc., 817 E. King St., York, Pa.
Master Automatic Oil Burner Co., Iowa & Division Sts., Kansas City 3, Kan.
Mastercraft Supply Co., Inc., 29 W. Broad St., Haverstraw, N.Y.
Maxon Premix Burner Co., 201 E. 18th St., Muncie, Ind.
May Oil Burner Corp., 1500 Russell St., Baltimore 30, Md.
Mayflower Air Conditionings, Inc., Duluth Ave. & E. Seventh St., St. Paul 6, Minn.
Mead Cornell & Co., P.O. Box 2683, 16912 Lakewood Heights Blvd., Cleveland 7, Ohio.
Mel-Gauge Co., Crest Ave. & Foxon Rd., E. Haven, Conn.
Mears-Kane-Ofeldt, Inc., Div. of S. T. Johnson Co., P.O. Box 223, Bridgeport, Pa.
Measurements Methods Co., 845 Chicago Ave., Evanston, Ill.
Mechanical Products Co., 1723 First Ave., So., Seattle 4, Wash.
Mel Gauge Co., The, Crest Ave., New Haven, Conn.
Mercoid Corp., 4201 Belmont Ave., Chicago 41, Ill.
Meriam Instrument Co., 10948 Madison Ave., Cleveland 2, Ohio
Merit Oil Heating Corp., 526 No. High St., Mt. Vernon, N.Y.
Messer Co., Inc., The, 629 Central Ave., Newark 7, N.J.
Metal Hose & Tubing Co., Dover, N.J.
Metallizing Co. of America, 3520 W. Carroll Ave., Chicago 24, Ill.
Metro Oil Burner Mfg. Co., Inc., Glendale Village, Easthampton, Mass.
Metromatic Oil Burner Co., 21 Henderson St., Everett 49, Mass.
Mettler Co., Inc., The, 4366 Worth St., Los Angeles 63, Calif.
Mexico Refractories Co., Love & Cole Sts., Mexico, Mo.
Meyer Furnace Co., The, 1300 So. Washington, Peoria 2, Ill.
Michigan Burner Co., 18392 Fitzpatrick Ave., Detroit 28, Mich.
Michigan Tank & Heater Corp., 14247 Treman Ave., Dearborn, Mich.
Midco Register Corp., 1059 Grand Ave., St. Paul 5, Minn.
Middleton & Meads Co., Inc., 11 E. Lee St., Baltimore 2, Md.
Miller Co., The, 99 Center St., Meriden, Conn.
Miller-Harris Instrument Co., 601 E. Ogden, Milwaukee, Wisc.
Miller Products Co., 3045 Rolfe Rd., P.O. Box 156, Lansing, Mich.
Milwaukee Electric Tool Corp., 5316 W. State St., Milwaukee 8, Wisc.
Milwaukee Valve Co., The, 23775 So. Burrell St., Milwaukee 7, Wisc.
Minit Spray Corp., Merchandise Mart Plaza, Chicago 54, Ill.
Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave. So., Minneapolis 8, Minn.
Mission Appliance Corp., 12611 So. Greenshaw, Hawthorne, Calif.
Modern Die & Machine Co., 166 Pleasant St., Boston 25, Mass.
Modern Heat, Inc., 4415 Chestnut St., Philadelphia 4, Pa.
Monarch Range Co., 715 No. Spring St., Beaver Dam, Wisc.
Modine Mfg. Co., Dekoven Ave., Racine, Wisc.
Monarch Mfg. Works, Inc., 2501 E. Ontario St., Philadelphia 34, Pa.
Monarch Range Co., 715 No. Spring St., Beaver Dam, Wisc.
Monogram Products Co., Inc., 731 No. 35th St., Philadelphia 4, Pa.
Montag Stove & Furnace Works, 2011 No. Columbia Blvd., Portland 17, Ore.
Moore Business Forms, 900 Buffalo Ave., Niagara Falls, N.Y.
Morris Couplings & Clamp Co., 46 Duncan Ave., Elwood City, Pa.
Morrison Bros., Dubuque, Iowa
Morheat Corp., 700 E. Kalamazoo St., Lansing 12, Mich.
Morrison Steel Products, Inc., 601 Amherst St., Buffalo 7, N.Y.
Morse-Smith-Morse Co., 165 Dexter Ave., Watertown, Mass.
Motór Wheel Corp., Lansing 3, Mich.
Mt. Hawley Mfg. Co., Mt. Hawley Airport, Peoria 4, Ill.
Mueller Co., 512 W. Cerro Gordo, Decatur, Ill.
Mueller Furnace Co., L. J., 2005 W. Oklahoma Ave., Milwaukee 15, Wisc.
Mueller Steam Specialty Co., Inc., 40-20 22d St., Long Island City 1, N.Y.
Muench Laboratories, Inc., 4555 Delmar Blvd., St. Louis 8, Mo.
Mulkey Co., J. F., P.O. Box 216, Bedford, Detroit 10, Mich.
Multiplex Mfg. Co., Berwick, Pa.
Mund Boilers, Inc., 1600 No. Indiana St., Los Angeles 63, Calif.

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National Aluminate Corp., 6216 W. 66th Pl., Chicago 38, Ill.
National Airoil Burner Co., Inc., 1284 E. Sedgley Ave., Philadelphia 34, Pa.
National Boiler Protector Co., 928 Reibold Bldg., Dayton 2, Ohio
National Fuel Conservation Co., Inc., 257 Battle Ave., White Plains, N.Y.
National Grille & Register Co., 3167 E. 80th St., Cleveland 4, Ohio
National Heater Co., Inc., 2182 Cleora Ave., St. Paul 4, Minn.
National Home Eqpt. Co., 50 Church St., New York 7, N.Y.
National Oil Corp., 3d & Maury Sts., Richmond, Va.
National Oil Burner Co., Inc., 614 Bergen St., Brooklyn 17, N.Y.
National Radiator Co., 221 Central Ave., Johnstown, Pa.

National Steam Pump Co., 701 W. Johnson, Upper Sandusky, Ohio
National Steel Construction Co., 301 Water St., Logansport, Ind.
National Steel Construction Co., 500 Myrtle St., Seattle 8, Wash.
National Super Service Co., 1946 No. 13th St., Toledo 2, Ohio
Neptune Meter Co., 50 W. 50th St., New York 20, N.Y.
Nesbitt, Inc., John J., State Rd. & Rhawn St., Philadelphia 36, Pa.
Nesco, Inc., 201 No. Michigan Ave., Chicago, Ill.
New-Aire Blower Co., Inc., 25245 John R St., Royal Oak, Mich.
Newark Controls, 15 Ward St., Bloomfield, N.J.
New England Carbide Tool Co., Inc., 60 Brookline St., Cambridge, Mass.
New York Air Valve Corp., 1850 Atlantic Ave., Brooklyn 33, N.Y.
New York Blower Co., 3155 Shields Ave., Chicago 16, Ill.
New Yorker Steel Boiler, Inc., P.O. Box 184, Colmar, Pa.
Newark Controls Co., 15 Ward St., Bloomfield, N.J.
Niagara Furnace Div., Forest City Foundries Co., 2500 W. 27th St., Cleveland 13, Ohio
Noble Fuel Oil Burner Co., 1326 No. Ashland, Chicago 22, Ill.
Nock Fire Brick Co., The, 1221-1243 E. 55th St., Cleveland 3, Ohio
Nola Oil Burner Co., 3608 Howard Ave., P.O. Box 1404, New Orleans 5, La.
Norge Div., Borg-Warner Corp., 346 E. South St., Kalamazoo, Mich.
Norman Chemical Co., 470 No. Cleveland Ave., St. Paul 4, Minn.
Norman Products Co., 1150 Chesapeake Ave., Columbus 8, Ohio
Norse Boiler Co., Inc., Stelton Rd., New Market, N.J.
North American Mfg. Co., 4455 E. 71st St., Cleveland 5, Ohio
Northern Controlled Heat Co., Inc., 555-7 Factory Sq., Watertown, N.Y.
Northern New Jersey Oil Co., 369 Riverside Ave., Newark, N.J.
Northwest Fdry. & Furnace Co., 2345 E. Gladstone St., Portland 2, Ore.
Northwest Heating, Inc., 1944 No. Lombard, Portland, Ore.
Northwest Metal Products, Inc., 55 Spokane St., Seattle 4, Wash.
Norwalk Air Conditioning Corp., 138 Water St., So. Norwalk, Conn.
Norwalk Tank Co., 10 No. Water St., So. Norwalk, Conn.
Nu-Way Corp., The, 2416 Fourth Ave., Rock Island, Ill.

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Oakland Fdry Co., Florida & "A" Sts., Belleville, Ill.
O'Brien Steam Specialty Co., Inc., 205 Harrison St., Syracuse 2, N.Y.
O'Halloran Industries, 12305 Turner Ave., Detroit 4, Mich.
Ohio Brass Co., 380 No. Main St., Mansfield, Ohio
Ohio Electric Mfg. Co., 5900 Maurice Ave., Cleveland 4, Ohio
Ohio Valley Hardware & Roofing Co., 300 Fourth Ave., Evansville 2, Ind.
Oneida Heater Co., Inc., 109 No. Warner St., Oneida, N.Y.
Oil-Elec-Tric Co., 1930 University, St. Paul 4, Minn.
Oil Eqpt. Laboratories, Inc., Bridge St., Elizabeth 2, N.J.
Oil Eqpt. Mfg. Co., Inc., 3100 Vermont Ave., Louisville 11, Ky.
Olsen Mfg. Co., Elyria, Ohio
Olson Co., Arthur A., Broad & Court Sts., Canfield, Ohio
Ontario Iron Works, 521 Maple Ave., Pulaski, N.Y.
Oran Co., 222 So. Third St., Columbus 7, Ohio
Oregon Woodcraft Co., P. O. Box 74, 2925 Allen Ave., Beaverton, Ore.
Orr & Sembower, Inc., Morgantown Rd., Reading, Pa.
Otto Boiler Co., 1905 Clearlake Ave., Springfield, Ill.
Over Head Heaters, Inc., 1612 Book Bldg., Detroit 26, Mich.
Owens-Corning Fiberglas Corp., Wayne Bldg., Toledo 1, Ohio

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Pacific Automatic Heating Co., 1658 20th Ave., Seattle, Wash.
Pacific Oil Co., Durfee Theater Bldg., Fall River, Mass.
Pacific Transducer Corp., 11921 W. Pica Blvd., Los Angeles 64, Calif.
Packard Electric Div., General Motors Corp., Warren, Ohio
Packless Metal Hose, Inc., 31-20 Winthrop Ave., New Rochelle, N.Y.
Paragon Electric Co., 1600 12th St., Two Rivers, Wisc.
Paragon Oil Burner Corp., 75 Bridgewater St., Brooklyn 22, N.Y.
Park Oil Burner, New York Ave. & Absecon Blvd., Atlantic City, N.J.
Parke-Hill Chemical Corp., 57 So. Sixth Ave., Mt. Vernon, N.Y.
Parker Boiler Mfg. Co., Inc., Sid E., 2035 E. 37th St., Los Angeles 11, Calif.
Parker-Kalon Corp., 200 Varick St., New York 14, N.Y.
Parks-Cramer Co., Newport St., Fitchburg, Mass.
Patco Mfg. Co., 231 No. Bread St., Philadelphia 6, Pa.
Paterson-Kelly Co., Inc., E. Stroudsburg, Pa.
Patten Co., J. V., 550 DeKalb Ave., Sycamore, Ill.
Peabody Eng. Corp., 580 Fifth Ave., New York 36, N.Y.
Pecora Paint Co., Inc., 315 Sedgley Ave., Philadelphia 40, Pa.
Peerless Electric Co., Warren, Ohio
Peerless Furnace & Fdry., Inc., 1853 Ludlow Ave., Indianapolis, Ind.
Peerless Heater Div., The Eastern Fdry. Co., Spring & Shaeffer Sts., Boyertown, Pa.
Peerless Trailer & Truck Service, Inc., 549 N.E. Third Ave., Portland 14, Ore.
Penn Boiler & Burner Mfg. Corp., Fruitville Rd., Lancaster, Pa.
Penn Brass & Copper Co., W. 20th & Powell Ave., Erie, Pa.
Penn Controls, Inc., Goshen, Ind.
Pennsylvania Furnace & Iron Co., 316 Pine St., Warren, Pa.
Pentwater Machinery Co., Pentwater, Mich.
Penn Transformer Corp., Bellefonte, Pa.
Perfection Stove Co., 7609 Platt Ave., Cleveland 4, Ohio
Perfex Corp., 415 W. Oklahoma Ave., Milwaukee 7, Wisc.
Peterson Co., B. A., Dowagiac, Mich.
Petro, 3170 W. 106th St., Cleveland 11, Ohio
Petro Oil Burner Mfg. Co., 23 Commercial St., Malden, Mass.
Philadelphia Valve Co., Aramingo Ave. & Ontario St., Philadelphia 34, Pa.
Piatt-Products Corp., 1149 So. Pennsylvania Ave., Lansing 4, Mich.
Plibrico Firebrick Co., 1800 Kingsbury St., Chicago 14, Ill.
Pilgrim Oil Burner Co., 471-5 Windsor St., Hartford, Conn.
Piqua Machine & Mfg. Co., Inc., 441 College St., Piqua, Ohio
Plastic Appliance Co., 5311 Westminster Ave., Philadelphia 31, Pa.
Portmar Boiler Co., Inc., 193 Seventh St., Brooklyn 15, N.Y.
Power Reels, Inc., 204 W. Utica St., Buffalo 22, N.Y.
Preferred Utilities Mfg. Co., 1860 Broadway, New York 23, N.Y.
Premier Furnace Co., Dowagiac, Mich.
Prentiss Wabers Products Co., 2600 Second St., No. Wisconsin Rapids, Wisc.
Presbrey Refractories Corp., 600 Somerset Ave., Taunton, Mass.
Price Fireplace Heater & Tank Div., Price National Corp., 5 Austin St., Buffalo, N.Y.
Purolator Products, Inc., 970 New Brunswick Ave., Rahway, N.J.
Pyrene Mfg. Co., 560 Belmont Ave., Newark 8, N.J.

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Quaker City Iron Works, Inc., Aramingo Ave. & Tioga St., Philadelphia 34, Pa.
Quaker Mfg. Co., 223 W. Erie St., Chicago 10, Ill.
Queen Stove Works, Inc., Marshall Ave., Albert Lea, Minn.
Quickdraft Co., Div. of Hall's Safe Co., Inc., 1642 Cleveland Ave., Canton 3, Ohio
Quick Furnace Co., 215 Court, Des Moines, Iowa
Quiet Automatic Burner Corp., 33-35 Bloomfield Ave., Newark 4, N.J.
Quiet Heet Mfg. Co., 46 Oliver St., Newark 5, N.J.
Quincy Stove Mfg. Co., 825 So. Front St., Quincy, Ill.

—R—

R.C.S. Tool Sales Co., 200 Maen Ave., Joliet, Ill.
Rackliffe Oil Co., 114 Franklin Sq., New Britain, Conn.
Radex Corp., 2076 Elston Ave., Chicago 14, Ill.
Radiant-Aire Corp., P.O. Box 151, Michigan City, Ind.
Radiant Baseboard Panels, Inc., 900 Main St., New Britain, Conn.
Radiant Utilities Corp., 8817 18th Ave., Brooklyn 14, N.Y.
Radiation Furnace Corp., 230 Bond, Benton Harbor, Mich.
Radiator Specialty Co., 535 Fillmore St., Chicago 24, Ill.
Radiator Specialty Co., 1700 Dowd Rd., Charlotte 1, N.C.
Rajah Co., The, 53 Locust Ave., Bloomfield, N.J.
Ramset Fastners, Inc., Ramset Div., Olin Industries, Inc., 12117 Berea Rd., Cleveland 11, Ohio
Ramtite Co., Div. S. Obermayer Co., 2563 W. 18th St., Chicago, Ill.
Randall Graphite Bearings, Inc., 1000 So. Greenlawn Ave., Lima, Ohio

Ray Oil Burner Co., 1301 San Jose Ave., San Francisco 12, Calif.
Rayfield Co., C. L., 2010 So. Halstead St., Chicago 8, Ill.
Reading Brass Co., 37 W. Carlton Rd., Hillsdale, Mich.
Reading Tube Corp., 36-12 47th Ave., Long Island City, N.Y.
Ready-Crete Co., 1936 So. Allis, Milwaukee, Wisc.
Rector Well Eqpt. Co., Inc., 2215 Commerce St., Houston 2, Tex.
Red Triangle Heater Co., Wausau, Wisc.
Red Wing Oil Burner Co., 217 Mystic Ave., Medford, Mass.
Reflectal Corp., Sub. of Borg-Warner Corp., 155 E. 44th St., New York 17, N.Y.
Refractory & Insulation Corp., Port Kennedy, Pa.
Refractory Specialty Co., 2200 Washington Ave., Philadelphia 46, Pa.
Refrigeration Appliances, Inc., 923 W. Lake St., Chicago 7, Ill.
Refrigeration Economics Co., Inc., 1231 Tuscanaivos St., E., Canton 2, Ohio
Rega Mfg. Co., 99 Mt. Hope Ave., Rochester 20, N.Y.
Reif-Rexoil, Inc., 37 Carroll St., Buffalo 3, N.Y.
Reliance Products Corp., 309 N.E. Davis St., Portland 14, Ore.
Reliance Tubular Products Co., 9112 St. Clair Ave., Cleveland 8, Ohio
Remco, Inc., 1017 Greenmount Ave., Baltimore, Md.
Remington Arms Co., Barnum Ave., Bridgeport, Conn.
Rempe Co., 340 No. Sacramento Blvd., Chicago 12, Ill.
Renneburg & Sons Co., Edward, 2639 Boston St., Baltimore 24, Md.
Reo Motors, Inc., 1331 So. Washington, Lansing, Mich.
Republic Flow Meters Co., 2240 W. Diversey Pkwy., Chicago 47, Ill.
Republic Products Co., 7420 State Rd., Philadelphia 36, Pa.
Research Products Corp., 1015 E. Washington Ave., Madison 10, Wisc.
Ret-Rac Corp., P.O. Box 136, Flushing, N.Y.
Revcor, 5201 No. Arondale St., Chicago 30, Ill.
Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N.Y.
Rex Clay Products Co., The, 14414 Dexter Blvd., Detroit 6, Mich.
Reif-Rexoil, Inc., 37-45 Carroll St., Buffalo 3, N.Y.
Rex Roto Corp., 14400 Dexter Blvd., Detroit 6, Mich.
Rheem Mfg. Co., 7600 So. Kedzie Ave., Chicago 29, Ill.
Rhode Island Fittings Co., 355 Dexter St., Providence, R.I.
Richmond Radiator Co., 19 E. 47th St., New York 17, N.Y.
Richmond Radiator Co., New Castle, Del.
Ridge Tool Co., 400 Clark St., Elyria, Ohio
Riley Stoker Co., 9 Neponset St., Worcester, Mass.
Rittling Corp., The, Rand Bldg., Buffalo 3, N.Y.
Roberts-Gordon Appliance Corp., 44 Central Ave., Buffalo 6, N.Y.
Robot Auto Heat Corp., Newfield St., Middletown 2, Conn.
Rochester Mfg. Co., Inc., 100 Rockwood St., Rochester 10, N.Y.
Rock Island Register Co., 2435 Fifth Ave., Rock Island, Ill.
Rockford Brass Works, 700 So. Main, Rockford, Ill.
Rockwell Mfg. Co., 400 No. Lexington Ave., Pittsburgh, Pa.
Rockwell Co., W. S., 200 Eliot St., Fairfield, Conn.
Rome-Turney Radiator Co., Canal St., Rome, N.Y.
Ronci Machine Co., 2 Atlantic Blvd., Centredale 11, R.I.
Roper Corp., Geo. D., 773 Blackhawk Ave., Rockford, Ill.
Rossoe Mfg. Co., 413 Fairview Ave., No., Seattle, Wash.
Round Oak Co. Inc. of Indiana, Dowagiac, Mich.
Russell Co., F. C., 1100 Chestnut Ave., Cleveland 1, Ohio.
Russo, Inc., Thomas D., 75 Bradeen St., Boston 31, Mass.
Rybolt Heater Co., The, 615 Miller St., Ashland, Ohio

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S-K Co., Inc., Admiral Wilson Blvd., Camden, N.J.
S.O.S. Products Co., Inc., 282 Nassau Ave., Brooklyn 22, N.Y.
Safety Blue Flame Oil Burner Mfg. Co., 957 Main St., Brockton, Mass.
Safety Products Co., 975 Main St., Brockton, Mass.
St. Louis Furnace Mfg. Co., 2700 No. 25th St., St. Louis, Mo.
Salina Metal Products, Box 367, Salina, Kan.
Salisbury Tank & Steel Co., 68 Water St., Newburyport, Mass.
Sall Mountain Co., 176 W. Adams St., Chicago 3, Ill.
Sall Mountain Co., Rockdale Lane, Hamilton, Ohio
Sam-Bee Oil Burner Co., 510 E. Victoria St., So. Bend 14, Ind.
Sampsel Time Control, Inc., 600 No. Strong Ave., Spring Valley, Ill.
Sandberg Mfg. Co., 3850 N.W. Yeon Ave., Portland 10, Ore.
Sarco Co., Inc., Empire State Bldg., New York 1, N.Y.
Schaefer Brush Mfg. Co., 117 W. Walker St., Milwaukee 4, Wisc.
Schaible Co., 1286 Summer St., Cincinnati, Ohio
Schaub Eng. Co., Inc., 2110 So. Marshall Blvd., Chicago 23, Ill.
Schecter Bros. Co., Corner Hancock & Huntington Sts., Philadelphia 22, Pa.
Schemenauer Mfg. Co., Holland, Ohio
Schill Mfg. Co., 302 Mansfield St., Crestline, Ohio
Schirmer-Dornbirer Pump Co., 1719 E. 39th St., Cleveland 14, Ohio
Schlitt & Son, Inc., Joseph A., 147-149 Clarke Ave., Jersey City 4, N.J.
Schnacke, Inc., 1101 No. Governor St., Evansville, Ind.
Schoenberger Co., The W. J., 8810 Harvard Ave., Cleveland 5, Ohio
Schurs Oil Burner Co., 8500 Zamore Ave., Los Angeles 1, Calif.
Schwab Safe Co., E. Main St., Lafayette, Ind.
Scott-Newcomb, Inc., 41 Berry Oaks, St. Louis 19, Mo.
Scovill Mfg. Co., 99 Mill St., Waterbury 20, Conn.
Scully Signal Co., 88 First St., Cambridge 41, Mass.
S-Del Co., The, Lincoln Highway, Berwyn, Pa.
Seidelhuber Iron & Brass Works, Inc., 3693 Durvarmsh Ave., Seattle 4, Wash.
Selectrol Eng. Co., 2036 McDonald Ave., Brooklyn 23, N.Y.
Sellers Eng., 4874-76 No. Clark St., Chicago, Ill.
Servel, Inc., 119 No. Morton Ave., Evansville 20, Ind.
Shadyside Fdry., Second & Jefferson, Martins Ferry, Ohio
Sharpsville Steel Fabricators, Inc., Sixth & Main Sts., Sharpsville, Pa.
Sheffield Bronze Paint Corp., 17814 Waterloo Rd., Cleveland 9, Ohio
Shell Chemical Corp., 50 W. 50th St., New York, N.Y.
Shepard Heater Co., Inc., 951 Sycamore St., Terre Haute, Ind.
Sicard & Paul, 2921 Stevens Ave., Minneapolis 8, Minn.
Siegler Enamel Range Co., Wilson Ave., Centralia, Ill.
Simeon Mfg. Co., 1819 Holmes St., Kansas City, 8, Mo.
Sigwald Eng. Co., 2937 Fourth Ave., So., Minneapolis 8, Minn.
Silent Automatic Products, Timken Silent Automatic Div., Timken-Detroit Axle Co., 209 E. Washington St., Jackson, Mich.
Silent-Flame Mfg. Co., Inc., 80725 Zerega Ave., New York 71, N.Y.
Silent Glow Oil Burner Corp., 850 Windsor St., Hartford 6, Conn.
Silent Sioux Corp., 208-212 W. College Ave., Orange City, Iowa
Silver Heat Oil Burner Co., 1010 So. 60th St., W. Philadelphia 43, Pa.
Simplex Heater Control Co., 897 Laurel St., St. Paul 4, Minn.
Simplex Mfg. Co., 202 No. Main St., Fond du Lac, Wisc.
Simplex Oil Heating Corp., 7901 Oxford Ave., Philadelphia 11, Pa.
Skidmore Corp., P.O. Box 309, St. Joseph, Mich.
Skinner Chuck Co., Edgewood Ave., New Britain, Conn.
Skinner Electric Valve Div., 141 Belden Ave., Norwalk, Conn.
Skinner Heating & Ventilating Co., Inc., Div. of St. Louis Blow Pipe & Heater, Inc., 1954 No. Ninth St., St. Louis 6, Mo.
Skuttle Mfg. Co., 4099 Beaufait, Detroit 7, Mich.
Slant-Fin Radiator Corp., 5113 Second Ave., Brooklyn 32, N.Y.
Small Motors, Inc., 2076 Elston Ave., Chicago 14, Ill.
Smith, A. O. Corp., 5715 Smithway St., Los Angeles 22, Calif.
Smith Co., H. B., The, 57 Main St., Westfield, Mass.
Smith's Heating, Inc., Kinston, N.C.
Smith Twin Tubular Boiler Co., Inc., State Rd. & Cottman St., Philadelphia 35, Pa.
Snyder Co., The, Massillon, Ohio
Sonoco Products Co., Hartsville, S. C.
Sorenson-Vana Corp., 2306 North St., Omaha, Nebr.
Southern Heater Co., 133 W. Palmer, Compton, Calif.
Southern Tank & Mfg. Co., Owensboro, Ky.
Span Brass Mfg. Co., Inc., 400 Wilson St., Otsego, Mich.
Spark Stove Co., Inc., 2619 E. 12th St., Oakland 1, Calif.
Sparkler Fueloil Filters, Mundelein, Ill.
Spencer Thermostat Div., Metals & Controls Corp., 34 Forest St., Attleboro, Mass.
Sprague Electric Co., North Adams, Mass.
Springfield Boiler Co., 1901 E. Capitol Ave., Springfield, Ill.
Square D Co., 4041 No. Richards St., Milwaukee 12, Wisc.
Staffco Eng. Co., 6600 So. Austin Ave., Chicago 38, Ill.
Stahl Metal Products, Inc., 3490 W. 140th St., Cleveland 11, Ohio.
Stainless Steel Products Co., 1000 Berry Ave., St. Paul 4, Minn.
Standard Arcoil Corp., 21 Broad St., Newark 18, N.J.
Standard Heating Eqpt. Co., 1406 E. Fourth St., Waterloo, Iowa
Standard Railway Fusee Corp., Signal Flare Div., P.O. Box 30, Needham Heights 94, Mass.
Standard Register Co., The, Albany & Campbell, Dayton 1, Ohio
Standard Utilities Corp., 47 Stanton St., Newark 5, N.J.
Staples & Pfeiffer, 528 Bryant St., San Francisco 7, Calif.

Stedco Products, 247 Butler St., Kingston, Pa.
Steel City Furnace Corp., Hoeveler & R.R. Sts., Springdale, Pa.
Steel Tank & Sheet Metal Fabricators, Inc., 1135 W. 36th St., Chicago 9, Ill.
Steel Products, Inc., 105 Water St., W. Haven, Conn.
Stefco Steel Co., Heating Eqpt. Div., P.O. Box 189, Michigan City, Ind.
Steinen Mfg. Co., 43 Bruen St., Newark 5, N.J.
Sterling, Inc., 3738 No. Holton St., Milwaukee 12, Wisc.
Sterling Radiator Co., Inc., 260 No. Elm St., Westfield, Mass.
Stewart Oil Burner Co., 218 Franklin St., Hanover, Pa.
Stout & Sons, David, 7016 Manchester St., St. Louis 17, Mo.
Stow Mfg. Co., Binghampton, N.Y.
Strong, Carlisle & Hammond Co., 1392 W. 3d St., Cleveland 13, Ohio
Struthers Wells Corp., Iron Works Div., Titusville, Pa.
Sturtevant Div., Westinghouse Electric Corp., Boston, Mass.
Stutzman Oil Burner Co., 27 Albert Ave., Aldan P.O., Clifton Heights, Pa.
Sunbeam Oil Burner Mfg. Corp., 1455 Blondell Ave., Bronx 61, N.Y.
Sun Ray Burner Mfg. Corp., 139-24 Queens Blvd., Jamaica, N.Y.
Sundstrand Eng. Co., 1325 Seventh St., Rockford, Ill.
Sundstrand Machine Tool Co., Hydraulic Div., 2421 Eleventh St., Rockford, Ill.
Sunshine Chemical Co., Inc., John, 604 W. Lake St., Chicago 6, Ill.
Super Oil Heater Co., 942 New Britain Ave., Hartford, Conn.
Superior Combustion Industries, Inc., 1475 Broadway, New York 18, N.Y.
Sure Heat Stove Co., Inc., Box 215, Plano, Tex.
Surface Combustion Corp., 2375 Dorr St., Toledo 1, Ohio
Sussex Nozzle Co., 358 Sussex Ave., Morristown, N.J.
Swett Brothers, 78 Island Pond Rd., Springfield, Mass.
Swirling Oil Burner Mfg. Corp., 22-09 37th Ave., Long Island City 6, N.Y.
Syncromatic Corp., 1141 10th St., Watertown 9, Wisc.
Synchronous Flame, Inc., 327 So. LaSalle St., Chicago 4, Ill.
Syntron Co., 902 Lexington, Homer City, Pa.

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Taco Heaters, Inc., 137 South St., Providence, R.I.
Tal Bender, Inc., 417 No. Walter, Milwaukee 2, Wisc.
Tankit Co., 17 Shepard Ave., Newark, N.J.
Taylor Instrument Co., 95 Ames St., Rochester 1, N.Y.
Teesdale Co., The R. S., 1809 Amjerst St., N.E., Grand Rapids 3, Mich.
Terre Haute Boiler Works Co., 1140 Crawford St., Terre Haute, Ind.
Thatcher Furnace Co., The, Centre St., Garwood, N.J.
Therm Gas Generator Co., Inc., 2105 Westlake Ave., Seattle 1, Wash.
Thermo-Base Div., Gerwin Industries, 214 Spring St., Michigan City, Ind.
Thermobloe Div., Prat-Daniel Corp., 2 Meadow St., So. Norwalk, Conn.
Thermolok Mfg. Co., 541 Rogers Ave., Brooklyn 25, N.Y.
Thermo-Products, Inc., P.O. Box 147, North Judson, Ind.
Thrush & Co., H. A., 21 E. Riverside Dr., Peru, Ind.
Timken Silent Automatic Div., Timken-Detroit Axle Co., 209 E. Washington St., Jackson, Mich.
Titus, Inc., P.O. Box 598, Waterloo, Iowa
Titusville Iron Works Div., Struthers Wells Corp., So. Franklin St., Titusville, Pa.
Tjernlund Mfg. Co., The, 2140 Kasota Ave., St. Paul 14, Minn.
Todd Shipyards Corp., Combustion Eqpt. Div., 81-16 45th Ave., Elmhurst, N.Y.
Toledo Heater Co., 25 So. St. Clair St., Toledo 4, Ohio
Toridheat Div., Cleveland Steel Products Corp., 7306 Madison Ave., Cleveland 2, Ohio
Tork Clock Co., Inc., 1 Grove St., Mt. Vernon, N.Y.
Torrington Mfg. Co., 70 Franklin St., Torrington, Conn.
Tower Mfg. Corp., 222 Summer St., Boston, Mass.
Trageser Copper Works, Inc., 500 Grand Ave., Maspeth, L.I., N.Y.
Trailmobile Co., 31st & Robertson Sts., Cincinnati, Ohio
Trane Co., The, Second & Cameron Ave., LaCrosse, Wisc.
Trent, Inc., 201-299 Leverington Ave., Philadelphia 27, Pa.
Trenton Heating Mfg. Co., 2834 Fifth St., Trenton, Mich.
Triad Products Corp., 5121 No. Clark St., Chicago 40, Ill.
Triangle Tank Div., Inc., 245 Russell St., Brooklyn 22, N.Y.
Triangle Tube & Specialty Co., Lucaston, RFD, Berlin, N.J.
Trico Baseboard Heating, 222 Lakeside Ave., Pompton Lakes, N.J.
Trion, Inc., 1000 Island Ave., McKees Rocks, Pa.
Tri-Saw Corp., 2207 Hanley Industrial Ct., St. Louis 17, Mo.
Triplex Heating Specialty Co., Peru, Ind.
Truckstell Co., Union Commerce Bldg., Cleveland, Ohio
True-Heet Co., 532 Miller Ave., Trenton, N.J.
Tubing Appliance Co., Inc., 10321 Anza Ave., Los Angeles 45, Calif.
Tucker & Sons Mfg., 48th & Pacific Ave., Tacoma 8, Wash.
Tur-Bin Corp., 301 E. Lafayette Ave., Baltimore 2, Md.
Turbo-Ray, Inc., 31 Winthrop Ave., New Rochelle, N.Y.
Turb-O-Tube Furnace, Inc., 204 Rhode Island St., Buffalo 13, N.Y.
Tuthill Pump Co., 939 E. 95th St., Chicago 19, Ill.
XXth Century Heating & Ventilating Co., 96 Ira Ave., Akron 1, Ohio
Twin Control Burner Mfg. Co., 3240 Barker Ave., New York 67, N.Y.
Typhoon Air Conditioning Co., Inc., 794 Union St., Brooklyn 15, N.Y.

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Ultra Metal Utilities Corp., 27-05-07 Astoria Blvd., Long Island City 2, N.Y.
Union Spring & Mfg. Co., 1057 Summit Ave., Jersey City, N.J.
Unique Art Mfg. Co., Inc., 200 Waverly Ave., Newark 8, N.J.
U. S. Air Conditioning Corp., Como Ave., S.E., at 33d St., Minneapolis 14, Minn.
U. S. Machine Div., Stewart-Warner Corp., 320 No. "C" St., Lebanon, Ind.
U. S. Petroleum Co., 104 Lakeview Ave., Clifton, N.J.
U. S. Radiator Corp., 300 Buehl Bldg., Detroit 26, Mich.
U. S. Register Co., 344 E. Burnham St., Battle Creek Mich.
U. S. Rubber Co., 1230 Ave. of the Americas, New York 20, N.Y.
United Stove Co., 800 Lowell St., Ypsilanti, Mich.
Universal Air Filter Corp., 332 W. Michigan St., Duluth 2, Minn.
Universal Brass Co., 855 Kearny Ave., Arlington, N.J.
Universal Electric Co., 300 E. Main, Owosso, Mich.
Universal Valve Co., 409 South St., Elizabeth 4, N.J.
Utility Appliance Corp., 4851 So. Alameda St., Los Angeles 58, Calif.
Utica Radiator Corp., 2201 Dwyer Ave., Utica, N.Y.
Devereux Block, Utica 2, N.Y.

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V&E Products, Liberty St., Schuylkill Haven, Pa.
Valley Forge Metals Co., Fifth & Mitchell Sts., Lansdale, Pa.
Van-Packer Corp., 209 So. LaSalle St., Chicago, Ill.
Vapor Heating Corp., 4501 W. 16th St., Chicago 23, Ill.
Vapofier Corp., 10316 So. Throop St., Chicago 43, Ill.
Vectaire Mfg. Co., 251 Howard St., Melrose, Mass.
Venturi Chimney Cap Co., 3641-R Fulton Rd., Cleveland 9, Ohio
Victor Oil Burner Mfg. Co., 250 Pleasant St., Hartford, Conn.
Victory Eng. Corp., Springfield Rd., Union, N.J.
Viking Air Conditioning Corp., 5601 Walworth Ave., Cleveland 2, Ohio
Viking Mfg. Co., 1747 Chester Ave., Cleveland 14, Ohio
Viking Oil Co., 2482 W. Capitol Dr., Milwaukee, Wisc.
Viking Pump Co., Fourth & McCann Sts., Cedar Falls, Iowa
Visa Clean Corp., Randallstown, Md.
Volcano Burner Corp., 3612 E. Tremont Ave., New York 61, N.Y.
Volu-Trol Co., Highway 61 & Kohmnan St., St. Paul 9, Minn.
Vulcan Electric Co., 88 Holten St., Danvers, Mass.
Vulcan Radiator Co., 26 Francis Ave., Hartford 6, Conn.

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Walker Mfg. & Sales Corp., 1171-17 Penn St., St. Joseph 28, Mo.
Walsh Refractories Corp., 101 Ferry St., St. Louis 7, Mo.
Waltham Oil Burner Co., 1214 Bennington St., E. Boston, Mass.
Warner Lewis Co., 817 No. Lewis Pl., P.O. Box 3096, Tulsa 8, Okla.
Warren Webster & Co., Seventeenth & Federal Sts., Camden 5, N.J.
Washington Stove Works, 3402 Smith Ave., Everett, Wash.

Wassell Organization, Inc., Westport, Conn.
Water Tube Boiler & Tank Co., 140 W. Root St., Chicago 9, Ill.
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Wayne Home Eqpt. Co., 801 Glasgow Ave., Ft. Wayne, Ind.
Weatherall Engineers, Inc., 387 Charles St., Providence 4, R.I.
Weatherhead Co., The, 300 E. 131st St., Cleveland 8, Ohio
Webb & Son Co., Elisha, 136 S. Front St., Philadelphia 6, Pa.
Webb Machine & Tool Co., R.D. 1, Imperial, Pa.
Webster Electric Co., 1900 Clark St., Racine, Wisc.
Webster Eng. Co., 115 So. Frisco St., P.O. Box 2168, Tulsa, Okla.
Weil-McLain Co., Michigan City, Ind.
Wescott-Alexander, Inc., 42 Park Ave., Madison, N.J.
West Coast Quiet Heet, Inc., 1530 N.E. Grand Ave., Portland, Ore.
Westchester Home Eqpt. Co., 432 Austin Pl., Bronx, N.Y.
Western Blower Co., 1800 Airport Way, Seattle 4, Wash.
Western Stove Lining Works, W. Love St., Mexico, Mo.
Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa.
Westinghouse Electric Corp., Sturtevant Div., 105 Readville St., Boston 36, Mass.
Westinghouse Electric Corp., Lima, Ohio
Weston Electrical Instrument Corp., 641 Frelinghuysen Ave., Newark 15, N.J.
Wheaton Brass Works, Springfield Rd., Union, N.J.
White Fuel Corp., 900 E. First St., So. Boston, Mass.
White Motor Co., 842 E. 79th St., Cleveland 1, Ohio
White-Rodgers Electric Co., 1209 Cass Ave., St. Louis 6, Mo.
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Wiengand Co., Edwin L., 7762 Thomas Blvd., Pittsburgh 8, Pa.
Wigwam Flue Top Co., 325 Washington St., Abington, Mass.
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Williams Oil-O-Matic Div., Eureka Williams Corp., 1201 E. Bell St., Bloomington, Ill.
Williamson Heater Co., 3500 Madison Rd., Cincinnati 9, Ohio
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Wilson Stove & Mfg. Co., Inc., Box 187, Metropolis, Ill.
Windmaster Corp., 899 Indleside Ave., Columbus 8, Ohio
Windmaster Draft Control Co., Stop 26—Long Beach, Michigan City, Ind.
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Winston Co., Inc., 359 Avon Ave., Newark 8, N.J.
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Wise Furnace Co., The, So. 21st St., Newark, Ohio
Wishman Co., R. H., 204 W. Utica St., Buffalo 9, N.Y.
Wolverine Tube Div., Dalument & Hecla Consolidated Copper Co., 1411 Central Ave., Detroit 9, Mich.
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Woodruff Thermo Products, Inc., 29-02 High St., Fair Lawn, N.J.
Woolley Co., E. L., 60 Dunnell Lane, Pawtucket, R.I.
Wright & Co., Norman S., 1932 S.W. Water Ave., Portland 1, Ore.

—X—

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—Y—

Yale & Towne Mfg. Co., Stamford, Conn.
York Corp., Roosevelt Ave., York, Pa.
York-Shipley, Inc., York, Pa.
Young Radiator Co., 707 S. Marquette St., Racine, Wisc.
Yula Water Heaters, Inc., 166 W. 225th St., New York 63, N.Y.

—Z—

ZYX, Inc., 50 Bridge St., Brooklyn 1, N.Y.
Zambell Boiler Works, 1710 No. Delaware Ave., Philadelphia 25, Pa.
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